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APPENDIX A TO PART 63—TEST METHODS

APPENDIX B TO PART 63—SOURCES DEFINED FOR EARLY REDUCTION PROVISIONS

APPENDIX C TO PART 63—DETERMINATION OF THE FRACTION BIODEGRADED (F_{bio}) IN A BIOLOGICAL TREATMENT UNIT

APPENDIX D TO PART 63—ALTERNATIVE VALIDATION PROCEDURE FOR EPA WASTE AND WASTEWATER METHODS

AUTHORITY: 42 U.S.C. 7401 *et seq.*

SOURCE: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart A—General Provisions

SOURCE: 59 FR 12430, Mar. 16, 1994, unless otherwise noted.

§ 63.1 Applicability.

(a) *General.* (1) Terms used throughout this part are defined in § 63.2 or in the Clean Air Act (Act) as amended in 1990, except that individual subparts of this part may include specific definitions in addition to or that supersede definitions in § 63.2.

(2) This part contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Act. This section explains the applicability of such standards to sources affected by them. The standards in this part are independent of NESHAP contained in 40 CFR part 61. The NESHAP in part 61 promulgated by signature of the Administrator before November 15, 1990 (i.e., the date of enactment of the

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Clean Air Act Amendments of 1990) remain in effect until they are amended, if appropriate, and added to this part.

(3) No emission standard or other requirement established under this part shall be interpreted, construed, or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established by the Administrator pursuant to other authority of the Act (including those requirements in part 60 of this chapter), or a standard issued under State authority.

(4) The provisions of this subpart (i.e., subpart A of this part) apply to owners or operators who are subject to subsequent subparts of this part, except when otherwise specified in a particular subpart or in a relevant standard. The general provisions in subpart A eliminate the repetition of requirements applicable to all owners or operators affected by this part. The general provisions in subpart A do not apply to regulations developed pursuant to section 112(r) of the amended Act, unless otherwise specified in those regulations.

(5) [Reserved]

(6) To obtain the most current list of categories of sources to be regulated under section 112 of the Act, or to obtain the most recent regulation promulgation schedule established pursuant to section 112(e) of the Act, contact the Office of the Director, Emission Standards Division, Office of Air Quality Planning and Standards, U.S. EPA (MD-13), Research Triangle Park, North Carolina 27711.

(7) Subpart D of this part contains regulations that address procedures for an owner or operator to obtain an extension of compliance with a relevant standard through an early reduction of emissions of hazardous air pollutants pursuant to section 112(i)(5) of the Act.

(8) Subpart E of this part contains regulations that provide for the establishment of procedures consistent with section 112(l) of the Act for the approval of State rules or programs to implement and enforce applicable Federal rules promulgated under the authority of section 112. Subpart E also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities

granted through a section 112(l) approval.

(9) [Reserved]

(10) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement.

(11) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, test plan, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to by the permitting authority, is acceptable.

(12) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in § 63.9(i).

(13) Special provisions set forth under an applicable subpart of this part or in a relevant standard established under this part shall supersede any conflicting provisions of this subpart.

(14) Any standards, limitations, prohibitions, or other federally enforceable requirements established pursuant to procedural regulations in this part

[including, but not limited to, equivalent emission limitations established pursuant to section 112(g) of the Act] shall have the force and effect of requirements promulgated in this part and shall be subject to the provisions of this subpart, except when explicitly specified otherwise.

(b) *Initial applicability determination for this part.* (1) The provisions of this part apply to the owner or operator of any stationary source that—

(i) Emits or has the potential to emit any hazardous air pollutant listed in or pursuant to section 112(b) of the Act; and

(ii) Is subject to any standard, limitation, prohibition, or other federally enforceable requirement established pursuant to this part.

(2) In addition to complying with the provisions of this part, the owner or operator of any such source may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to title V of the Act (42 U.S.C. 7661). For more information about obtaining an operating permit, see part 70 of this chapter.

(3) An owner or operator of a stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants who determines that the source is not subject to a relevant standard or other requirement established under this part, shall keep a record of the applicability determination as specified in §63.10(b)(3) of this subpart.

(c) *Applicability of this part after a relevant standard has been set under this part.* (1) If a relevant standard has been established under this part, the owner or operator of an affected source shall comply with the provisions of this subpart and the provisions of that standard, except as specified otherwise in this subpart or that standard.

(2) If a relevant standard has been established under this part, the owner or operator of an affected source may be required to obtain a title V permit from the permitting authority in the State in which the source is located. Emission standards promulgated in

this part for area sources will specify whether—

(i) States will have the option to exclude area sources affected by that standard from the requirement to obtain a title V permit (i.e., the standard will exempt the category of area sources altogether from the permitting requirement);

(ii) States will have the option to defer permitting of area sources in that category until the Administrator takes rulemaking action to determine applicability of the permitting requirements; or

(iii) Area sources affected by that emission standard are immediately subject to the requirement to apply for and obtain a title V permit in all States. If a standard fails to specify what the permitting requirements will be for area sources affected by that standard, then area sources that are subject to the standard will be subject to the requirement to obtain a title V permit without deferral. If the owner or operator is required to obtain a title V permit, he or she shall apply for such permit in accordance with part 70 of this chapter and applicable State regulations, or in accordance with the regulations contained in this chapter to implement the Federal title V permit program (42 U.S.C. 7661), whichever regulations are applicable.

(3) [Reserved]

(4) If the owner or operator of an existing source obtains an extension of compliance for such source in accordance with the provisions of subpart D of this part, the owner or operator shall comply with all requirements of this subpart except those requirements that are specifically overridden in the extension of compliance for that source.

(5) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such source also shall be subject to the notification requirements of this subpart.

(d) [Reserved]

(e) *Applicability of permit program before a relevant standard has been set under this part.* After the effective date of an approved permit program in the State in which a stationary source is (or would be) located, the owner or operator of such source may be required to obtain a title V permit from the permitting authority in that State (or revise such a permit if one has already been issued to the source) before a relevant standard is established under this part. If the owner or operator is required to obtain (or revise) a title V permit, he/she shall apply to obtain (or revise) such permit in accordance with the regulations contained in part 70 of this chapter and applicable State regulations, or the regulations codified in this chapter to implement the Federal title V permit program (42 U.S.C. 7661), whichever regulations are applicable.

§ 63.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Pub. L. 101-549, 104 Stat. 2399).

Actual emissions is defined in subpart D of this part for the purpose of granting a compliance extension for an early reduction of hazardous air pollutants.

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).

Affected source, for the purposes of this part, means the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a relevant standard or other requirement established pursuant to section 112 of the Act. Each relevant standard will define the "affected source" for the purposes of that standard. The term "affected source," as used in this part, is separate and distinct from any other use of that term in EPA regulations such as those implementing title IV of the Act. Sources regulated under part 60 or part 61 of this chapter are not affected sources for the purposes of part 63.

Alternative emission limitation means conditions established pursuant to sections 112(i)(5) or 112(i)(6) of the Act by the Administrator or by a State with an approved permit program.

Alternative emission standard means an alternative means of emission limitation that, after notice and opportunity for public comment, has been demonstrated by an owner or operator to the Administrator's satisfaction to achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such pollutant achieved under a relevant design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act.

Alternative test method means any method of sampling and analyzing for an air pollutant that is not a test method in this chapter and that has been demonstrated to the Administrator's satisfaction, using Method 301 in Appendix A of this part, to produce results adequate for the Administrator's determination that it may be used in place of a test method specified in this part.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

Area source means any stationary source of hazardous air pollutants that is not a major source as defined in this part.

Commenced means, with respect to construction or reconstruction of a stationary source, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

Compliance date means the date by which an affected source is required to be in compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established by the Administrator (or a State

with an approved permit program) pursuant to section 112 of the Act.

Compliance plan means a plan that contains all of the following:

(1) A description of the compliance status of the affected source with respect to all applicable requirements established under this part;

(2) A description as follows: (i) For applicable requirements for which the source is in compliance, a statement that the source will continue to comply with such requirements;

(ii) For applicable requirements that the source is required to comply with by a future date, a statement that the source will meet such requirements on a timely basis;

(iii) For applicable requirements for which the source is not in compliance, a narrative description of how the source will achieve compliance with such requirements on a timely basis;

(3) A compliance schedule, as defined in this section; and

(4) A schedule for the submission of certified progress reports no less frequently than every 6 months for affected sources required to have a schedule of compliance to remedy a violation.

Compliance schedule means: (1) In the case of an affected source that is in compliance with all applicable requirements established under this part, a statement that the source will continue to comply with such requirements; or

(2) In the case of an affected source that is required to comply with applicable requirements by a future date, a statement that the source will meet such requirements on a timely basis and, if required by an applicable requirement, a detailed schedule of the dates by which each step toward compliance will be reached; or

(3) In the case of an affected source not in compliance with all applicable requirements established under this part, a schedule of remedial measures, including an enforceable sequence of actions or operations with milestones and a schedule for the submission of certified progress reports, where applicable, leading to compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established pursuant to sec-

tion 112 of the Act for which the affected source is not in compliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.

Construction means the on-site fabrication, erection, or installation of an affected source.

Continuous emission monitoring system (CEMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of emissions.

Continuous monitoring system (CMS) is a comprehensive term that may include, but is not limited to, continuous emission monitoring systems, continuous opacity monitoring systems, continuous parameter monitoring systems, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by the regulation.

Continuous opacity monitoring system (COMS) means a continuous monitoring system that measures the opacity of emissions.

Continuous parameter monitoring system means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

Effective date means: (1) With regard to an emission standard established under this part, the date of promulgation in the FEDERAL REGISTER of such standard; or

(2) With regard to an alternative emission limitation or equivalent emission limitation determined by the Administrator (or a State with an approved permit program), the date that the alternative emission limitation or equivalent emission limitation becomes effective according to the provisions of this part. The effective date of a permit program established under

title V of the Act (42 U.S.C. 7661) is determined according to the regulations in this chapter establishing such programs.

Emission standard means a national standard, limitation, prohibition, or other regulation promulgated in a subpart of this part pursuant to sections 112(d), 112(h), or 112(f) of the Act.

Emissions averaging is a way to comply with the emission limitations specified in a relevant standard, whereby an affected source, if allowed under a subpart of this part, may create emission credits by reducing emissions from specific points to a level below that required by the relevant standard, and those credits are used to offset emissions from points that are not controlled to the level required by the relevant standard.

EPA means the United States Environmental Protection Agency.

Equivalent emission limitation means the maximum achievable control technology emission limitation (MACT emission limitation) for hazardous air pollutants that the Administrator (or a State with an approved permit program) determines on a case-by-case basis, pursuant to section 112(g) or section 112(j) of the Act, to be equivalent to the emission standard that would apply to an affected source if such standard had been promulgated by the Administrator under this part pursuant to section 112(d) or section 112(h) of the Act.

Excess emissions and continuous monitoring system performance report is a report that must be submitted periodically by an affected source in order to provide data on its compliance with relevant emission limits, operating parameters, and the performance of its continuous parameter monitoring systems.

Existing source means any affected source that is not a new source.

Federally enforceable means all limitations and conditions that are enforceable by the Administrator and citizens under the Act or that are enforceable under other statutes administered by the Administrator. Examples of federally enforceable limitations and conditions include, but are not limited to:

(1) Emission standards, alternative emission standards, alternative emission limitations, and equivalent emission limitations established pursuant to section 112 of the Act as amended in 1990;

(2) New source performance standards established pursuant to section 111 of the Act, and emission standards established pursuant to section 112 of the Act before it was amended in 1990;

(3) All terms and conditions in a title V permit, including any provisions that limit a source's potential to emit, unless expressly designated as not federally enforceable;

(4) Limitations and conditions that are part of an approved State Implementation Plan (SIP) or a Federal Implementation Plan (FIP);

(5) Limitations and conditions that are part of a Federal construction permit issued under 40 CFR 52.21 or any construction permit issued under regulations approved by the EPA in accordance with 40 CFR part 51;

(6) Limitations and conditions that are part of an operating permit issued pursuant to a program approved by the EPA into a SIP as meeting the EPA's minimum criteria for Federal enforceability, including adequate notice and opportunity for EPA and public comment prior to issuance of the final permit and practicable enforceability;

(7) Limitations and conditions in a State rule or program that has been approved by the EPA under subpart E of this part for the purposes of implementing and enforcing section 112; and

(8) Individual consent agreements that the EPA has legal authority to create.

Fixed capital cost means the capital needed to provide all the depreciable components of an existing source.

Fugitive emissions means those emissions from a stationary source that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Under section 112 of the Act, all fugitive emissions are to be considered in determining whether a stationary source is a major source.

Hazardous air pollutant means any air pollutant listed in or pursuant to section 112(b) of the Act.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

Lesser quantity means a quantity of a hazardous air pollutant that is or may be emitted by a stationary source that the Administrator establishes in order to define a major source under an applicable subpart of this part.

Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

New source means any affected source the construction or reconstruction of which is commenced after the Administrator first proposes a relevant emission standard under this part.

One-hour period, unless otherwise defined in an applicable subpart, means any 60-minute period commencing on the hour.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. For continuous opacity monitoring systems, opacity means the fraction of incident light that is attenuated by an optical medium.

Owner or operator means any person who owns, leases, operates, controls, or supervises a stationary source.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

Performance audit means a procedure to analyze blind samples, the content of which is known by the Administrator, simultaneously with the analysis of performance test samples in order to provide a measure of test data quality.

Performance evaluation means the conduct of relative accuracy testing, calibration error testing, and other measurements used in validating the continuous monitoring system data.

Performance test means the collection of data resulting from the execution of a test method (usually three emission test runs) used to demonstrate compliance with a relevant emission standard as specified in the performance test section of the relevant standard.

Permit modification means a change to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permit revision means any permit modification or administrative permit amendment to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

Permitting authority means: (1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of

operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

Reconstruction means the replacement of components of an affected or a previously unaffected stationary source to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and

(2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

Regulation promulgation schedule means the schedule for the promulgation of emission standards under this part, established by the Administrator pursuant to section 112(e) of the Act and published in the FEDERAL REGISTER.

Relevant standard means:

(1) An emission standard;
(2) An alternative emission standard;
(3) An alternative emission limitation; or

(4) An equivalent emission limitation established pursuant to section 112 of the Act that applies to the stationary source, the group of stationary sources, or the portion of a stationary source regulated by such standard or limitation.

A relevant standard may include or consist of a design, equipment, work practice, or operational requirement, or other measure, process, method, system, or technique (including prohibition of emissions) that the Administrator (or a State) establishes for new or existing sources to which such standard or limitation applies. Every relevant standard established pursuant to section 112 of the Act includes subpart A of this part and all applicable appendices of this part or of other

parts of this chapter that are referenced in that standard.

Responsible official means one of the following:

(1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the Administrator.

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).

(4) For affected sources (as defined in this part) applying for or subject to a title V permit: "responsible official" shall have the same meaning as defined in part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever is applicable.

Run means one of a series of emission or other measurements needed to determine emissions for a representative operating period or cycle as specified in this part.

Shutdown means the cessation of operation of an affected source for any purpose.

Six-minute period means, with respect to opacity determinations, any one of the 10 equal parts of a 1-hour period.

Standard conditions means a temperature of 293 K (68° F) and a pressure of 101.3 kilopascals (29.92 in. Hg).

Startup means the setting in operation of an affected source for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement: (1) The provisions of this part and/or (2) the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant.

Test method means the validated procedure for sampling, preparing, and analyzing for an air pollutant specified in a relevant standard as the performance test procedure. The test method may include methods described in an appendix of this chapter, test methods incorporated by reference in this part, or methods validated for an application through procedures in Method 301 of appendix A of this part.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

Visible emission means the observation of an emission of opacity or optical density above the threshold of vision.

§ 63.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) *System International (SI) units of measure:*

A = ampere
g = gram
Hz = hertz
J = joule
°K = degree Kelvin
kg = kilogram
l = liter
m = meter
m³ = cubic meter
mg = milligram = 10⁻³ gram
ml = milliliter = 10⁻³ liter
mm = millimeter = 10⁻³ meter

Mg = megagram = 10⁶ gram = metric ton

MJ = megajoule

mol = mole

N = newton

ng = nanogram = 10⁻⁹ gram

nm = nanometer = 10⁻⁹ meter

Pa = pascal

s = second

V = volt

W = watt

Ω = ohm

μg = microgram = 10⁻⁶ gram

μl = microliter = 10⁻⁶ liter

(b) *Other units of measure:*

Btu = British thermal unit

°C = degree Celsius (centigrade)

cal = calorie

cfm = cubic feet per minute

cc = cubic centimeter

cu ft = cubic feet

d = day

dcf = dry cubic feet

dcm = dry cubic meter

dscf = dry cubic feet at standard conditions

dscm = dry cubic meter at standard conditions

eq = equivalent

°F degree Fahrenheit

ft = feet

ft² = square feet

ft³ = cubic feet

gal = gallon

gr = grain

g-eq = gram equivalent

g-mole = gram mole

hr = hour

in. = inch

in. H₂O = inches of water

K = 1,000

kcal = kilocalorie

lb = pound

lpm = liter per minute

meq = milliequivalent

min = minute

MW = molecular weight

oz = ounces

ppb = parts per billion

ppbw = parts per billion by weight

ppbv = parts per billion by volume

ppm = parts per million

ppmw = parts per million by weight

ppmv = parts per million by volume

psia = pounds per square inch absolute

psig = pounds per square inch gage

°R = degree Rankine

scf = cubic feet at standard conditions

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scfh = cubic feet at standard conditions per hour
scm = cubic meter at standard conditions
sec = second
sq ft = square feet
std = at standard conditions
v/v = volume per volume
yd² = square yards
yr = year

(c) *Miscellaneous:*

act = actual
avg = average
I.D. = inside diameter
M = molar
N = normal
O.D. = outside diameter
% = percent

§ 63.4 Prohibited activities and circumvention.

(a) *Prohibited activities.* (1) No owner or operator subject to the provisions of this part shall operate any affected source in violation of the requirements of this part except under—

(i) An extension of compliance granted by the Administrator under this part; or

(ii) An extension of compliance granted under this part by a State with an approved permit program; or

(iii) An exemption from compliance granted by the President under section 112(i)(4) of the Act.

(2) No owner or operator subject to the provisions of this part shall fail to keep records, notify, report, or revise reports as required under this part.

(3) After the effective date of an approved permit program in a State, no owner or operator of an affected source in that State who is required under this part to obtain a title V permit shall operate such source except in compliance with the provisions of this part and the applicable requirements of the permit program in that State.

(4) [Reserved]

(5) An owner or operator of an affected source who is subject to an emission standard promulgated under this part shall comply with the requirements of that standard by the date(s) established in the applicable subpart(s) of this part (including this subpart) regardless of whether—

(i) A title V permit has been issued to that source; or

(ii) If a title V permit has been issued to that source, whether such permit has been revised or modified to incorporate the emission standard.

(b) *Circumvention.* No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to—

(1) The use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere;

(2) The use of gaseous diluents to achieve compliance with a relevant standard for visible emissions; and

(3) The fragmentation of an operation such that the operation avoids regulation by a relevant standard.

(c) *Severability.* Notwithstanding any requirement incorporated into a title V permit obtained by an owner or operator subject to the provisions of this part, the provisions of this part are federally enforceable.

§ 63.5 Construction and reconstruction.

(a) *Applicability.* (1) This section implements the preconstruction review requirements of section 112(i)(1) for sources subject to a relevant emission standard that has been promulgated in this part. In addition, this section includes other requirements for constructed and reconstructed stationary sources that are or become subject to a relevant promulgated emission standard.

(2) After the effective date of a relevant standard promulgated under this part, the requirements in this section apply to owners or operators who construct a new source or reconstruct a source after the proposal date of that standard. New or reconstructed sources that start up before the standard's effective date are not subject to the preconstruction review requirements specified in paragraphs (b)(3), (d), and (e) of this section.

(b) *Requirements for existing, newly constructed, and reconstructed sources.*

(1) Upon construction an affected

source is subject to relevant standards for new sources, including compliance dates. Upon reconstruction, an affected source is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

(2) [Reserved]

(3) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, no person may construct a new major affected source or reconstruct a major affected source subject to such standard, or reconstruct a major source such that the source becomes a major affected source subject to the standard, without obtaining written approval, in advance, from the Administrator in accordance with the procedures specified in paragraphs (d) and (e) of this section.

(4) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, no person may construct a new affected source or reconstruct an affected source subject to such standard, or reconstruct a source such that the source becomes an affected source subject to the standard, without notifying the Administrator of the intended construction or reconstruction. The notification shall be submitted in accordance with the procedures in §63.9(b) and shall include all the information required for an application for approval of construction or reconstruction as specified in paragraph (d) of this section. For major sources, the application for approval of construction or reconstruction may be used to fulfill the notification requirements of this paragraph.

(5) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is located, no person may operate such source without complying with the provisions of this subpart and

the relevant standard unless that person has received an extension of compliance or an exemption from compliance under §63.6(i) or §63.6(j) of this subpart.

(6) After the effective date of any relevant standard promulgated by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is located, equipment added (or a process change) to an affected source that is within the scope of the definition of affected source under the relevant standard shall be considered part of the affected source and subject to all provisions of the relevant standard established for that affected source. If a new affected source is added to the facility, the new affected source shall be subject to all the provisions of the relevant standard that are established for new sources including compliance dates.

(c) [Reserved]

(d) *Application for approval of construction or reconstruction.* The provisions of this paragraph implement section 112(i)(1) of the Act.

(1) *General application requirements.* (i) An owner or operator who is subject to the requirements of paragraph (b)(3) of this section shall submit to the Administrator an application for approval of the construction of a new major affected source, the reconstruction of a major affected source, or the reconstruction of a major source such that the source becomes a major affected source subject to the standard. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date of the relevant standard) if the construction or reconstruction commences after the effective date of a relevant standard promulgated in this part. The application shall be submitted as soon as practicable before startup but no later than 60 days after the effective date of a relevant standard promulgated in this part if the construction or reconstruction had commenced and initial startup had not occurred before the standard's effective date. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of

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§ 63.9(b)(5) of this subpart. The owner or operator may submit the application for approval well in advance of the date construction or reconstruction is planned to commence in order to ensure a timely review by the Administrator and that the planned commencement date will not be delayed.

(ii) A separate application shall be submitted for each construction or reconstruction. Each application for approval of construction or reconstruction shall include at a minimum:

(A) The applicant's name and address;

(B) A notification of intention to construct a new major affected source or make any physical or operational change to a major affected source that may meet or has been determined to meet the criteria for a reconstruction, as defined in § 63.2;

(C) The address (i.e., physical location) or proposed address of the source;

(D) An identification of the relevant standard that is the basis of the application;

(E) The expected commencement date of the construction or reconstruction;

(F) The expected completion date of the construction or reconstruction;

(G) The anticipated date of (initial) startup of the source;

(H) The type and quantity of hazardous air pollutants emitted by the source, reported in units and averaging times and in accordance with the test methods specified in the relevant standard, or if actual emissions data are not yet available, an estimate of the type and quantity of hazardous air pollutants expected to be emitted by the source reported in units and averaging times specified in the relevant standard. The owner or operator may submit percent reduction information if a relevant standard is established in terms of percent reduction. However, operating parameters, such as flow rate, shall be included in the submission to the extent that they demonstrate performance and compliance; and

(I) [Reserved]

(J) Other information as specified in paragraphs (d)(2) and (d)(3) of this section.

(iii) An owner or operator who submits estimates or preliminary information in place of the actual emissions data and analysis required in paragraphs (d)(1)(ii)(H) and (d)(2) of this section shall submit the actual, measured emissions data and other correct information as soon as available but no later than with the notification of compliance status required in § 63.9(h) (see § 63.9(h)(5)).

(2) *Application for approval of construction.* Each application for approval of construction shall include, in addition to the information required in paragraph (d)(1)(ii) of this section, technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including an identification of each point of emission for each hazardous air pollutant that is emitted (or could be emitted) and a description of the planned air pollution control system (equipment or method) for each emission point. The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations. An owner or operator who submits approximations of control efficiencies under this subparagraph shall submit the actual control efficiencies as specified in paragraph (d)(1)(iii) of this section.

(3) *Application for approval of reconstruction.* Each application for approval of reconstruction shall include, in addition to the information required in paragraph (d)(1)(ii) of this section—

(i) A brief description of the affected source and the components that are to be replaced;

(ii) A description of present and proposed emission control systems (i.e., equipment or methods). The description of the equipment to be used for the control of emissions shall include each control device for each hazardous

air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations;

(iii) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new source;

(iv) The estimated life of the affected source after the replacements; and

(v) A discussion of any economic or technical limitations the source may have in complying with relevant standards or other requirements after the proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the Administrator's satisfaction that the technical or economic limitations affect the source's ability to comply with the relevant standard and how they do so.

(vi) If in the application for approval of reconstruction the owner or operator designates the affected source as a reconstructed source and declares that there are no economic or technical limitations to prevent the source from complying with all relevant standards or other requirements, the owner or operator need not submit the information required in subparagraphs (d)(3) (iii) through (v) of this section, above.

(4) *Additional information.* The Administrator may request additional relevant information after the submittal of an application for approval of construction or reconstruction.

(e) *Approval of construction or reconstruction.* (1)(i) If the Administrator determines that, if properly constructed, or reconstructed, and operated, a new or existing source for which an application under paragraph (d) of this section was submitted will not cause emissions in violation of the relevant standard(s) and any other federally enforceable requirements, the Administrator will approve the construction or reconstruction.

(ii) In addition, in the case of reconstruction, the Administrator's determination under this paragraph will be based on:

(A) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new source;

(B) The estimated life of the source after the replacements compared to the life of a comparable entirely new source;

(C) The extent to which the components being replaced cause or contribute to the emissions from the source; and

(D) Any economic or technical limitations on compliance with relevant standards that are inherent in the proposed replacements.

(2)(i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of construction or reconstruction within 60 calendar days after receipt of sufficient information to evaluate an application submitted under paragraph (d) of this section. The 60-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(3) Before denying any application for approval of construction or reconstruction, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with—

(i) Notice of the information and findings on which the intended denial is based; and

(ii) Notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator to enable further action on the application.

(4) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 calendar days of presentation of additional information or arguments (if the application is complete), or within 60 calendar days after the final date specified for presentation if no presentation is made.

(5) Neither the submission of an application for approval nor the Administrator's approval of construction or reconstruction shall—

(i) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(ii) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(f) *Approval of construction or reconstruction based on prior State preconstruction review.* (1) The Administrator may approve an application for construction or reconstruction specified in paragraphs (b)(3) and (d) of this section if the owner or operator of a new or reconstructed source who is subject to such requirement demonstrates to the Administrator's satisfaction that the following conditions have been (or will be) met:

(i) The owner or operator of the new or reconstructed source has undergone a preconstruction review and approval process in the State in which the source is (or would be) located before the promulgation date of the relevant standard and has received a federally enforceable construction permit that contains a finding that the source will meet the relevant emission standard as proposed, if the source is properly built and operated;

(ii) In making its finding, the State has considered factors substantially equivalent to those specified in paragraph (e)(1) of this section; and either

(iii) The promulgated standard is no more stringent than the proposed standard in any relevant aspect that would affect the Administrator's decision to approve or disapprove an application for approval of construction or reconstruction under this section; or

(iv) The promulgated standard is more stringent than the proposed standard but the owner or operator will comply with the standard as proposed during the 3-year period immediately following the effective date of the standard as allowed for in § 63.6(b)(3) of this subpart.

(2) The owner or operator shall submit to the Administrator the request for approval of construction or reconstruction under this paragraph no later than the application deadline specified in paragraph (d)(1) of this section (see also § 63.9(b)(2) of this subpart). The owner or operator shall include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in paragraph (e) of this section. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction under this paragraph.

§ 63.6 Compliance with standards and maintenance requirements.

(a) *Applicability.* (1) The requirements in this section apply to owners or operators of affected sources for which any relevant standard has been established pursuant to section 112 of the Act unless—

(i) The Administrator (or a State with an approved permit program) has granted an extension of compliance consistent with paragraph (i) of this section; or

(ii) The President has granted an exemption from compliance with any relevant standard in accordance with section 112(i)(4) of the Act.

(2) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major

source, such source shall be subject to the relevant emission standard or other requirement.

(b) *Compliance dates for new and reconstructed sources.* (1) Except as specified in paragraphs (b)(3) and (b)(4) of this section, the owner or operator of a new or reconstructed source that has an initial startup before the effective date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act shall comply with such standard not later than the standard's effective date.

(2) Except as specified in paragraphs (b)(3) and (b)(4) of this section, the owner or operator of a new or reconstructed source that has an initial startup after the effective date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act shall comply with such standard upon startup of the source.

(3) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act but before the effective date (that is, promulgation) of such standard shall comply with the relevant emission standard not later than the date 3 years after the effective date if:

(i) The promulgated standard (that is, the relevant standard) is more stringent than the proposed standard; and

(ii) The owner or operator complies with the standard as proposed during the 3-year period immediately after the effective date.

(4) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of a relevant standard established pursuant to section 112(f) shall comply with the emission standard under section 112(f) not later than the date 10 years after the date construction or reconstruction is commenced, except that, if the section 112(f) standard is promulgated more than 10 years after construction or reconstruction is commenced, the owner or operator shall comply with the standard as provided

in paragraphs (b)(1) and (b)(2) of this section.

(5) The owner or operator of a new source that is subject to the compliance requirements of paragraph (b)(3) or paragraph (b)(4) of this section shall notify the Administrator in accordance with § 63.9(d) of this subpart.

(6) [Reserved]

(7) After the effective date of an emission standard promulgated under this part, the owner or operator of an unaffected new area source (i.e., an area source for which construction or reconstruction was commenced after the proposal date of the standard) that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source that is subject to the emission standard, shall comply with the relevant emission standard immediately upon becoming a major source. This compliance date shall apply to new area sources that become affected major sources regardless of whether the new area source previously was affected by that standard. The new affected major source shall comply with all requirements of that standard that affect new sources.

(c) *Compliance dates for existing sources.* (1) After the effective date of a relevant standard established under this part pursuant to section 112(d) or 112(h) of the Act, the owner or operator of an existing source shall comply with such standard by the compliance date established by the Administrator in the applicable subpart(s) of this part. Except as otherwise provided for in section 112 of the Act, in no case will the compliance date established for an existing source in an applicable subpart of this part exceed 3 years after the effective date of such standard.

(2) After the effective date of a relevant standard established under this part pursuant to section 112(f) of the Act, the owner or operator of an existing source shall comply with such standard not later than 90 days after the standard's effective date unless the Administrator has granted an extension to the source under paragraph (i)(4)(ii) of this section.

(3)–(4) [Reserved]

(5) After the effective date of an emission standard promulgated under

this part, the owner or operator of an unaffected existing area source that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source that is subject to the emission standard shall comply by the date specified in the standard for existing area sources that become major sources. If no such compliance date is specified in the standard, the source shall have a period of time to comply with the relevant emission standard that is equivalent to the compliance period specified in that standard for other existing sources. This compliance period shall apply to existing area sources that become affected major sources regardless of whether the existing area source previously was affected by that standard. Notwithstanding the previous two sentences, however, if the existing area source becomes a major source by the addition of a new affected source or by reconstructing, the portion of the existing facility that is a new affected source or a reconstructed source shall comply with all requirements of that standard that affect new sources, including the compliance date for new sources.

(d) [Reserved]

(e) *Operation and maintenance requirements.* (1)(i) At all times, including periods of startup, shutdown, and malfunction, owners or operators shall operate and maintain any affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards.

(ii) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section.

(iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(2) Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Adminis-

trator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section), review of operation and maintenance records, and inspection of the source.

(3) *Startup, shutdown, and malfunction plan.* (i) The owner or operator of an affected source shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. As required under § 63.8(c)(1)(i), the plan shall identify all routine or otherwise predictable CMS malfunctions. This plan shall be developed by the owner or operator by the source's compliance date for that relevant standard. The plan shall be incorporated by reference into the source's title V permit. The purpose of the startup, shutdown, and malfunction plan is to—

(A) Ensure that, at all times, owners or operators operate and maintain affected sources, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards;

(B) Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and

(C) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

(ii) During periods of startup, shutdown, and malfunction, the owner or operator of an affected source shall operate and maintain such source (including associated air pollution control equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed

under paragraph (e)(3)(i) of this section.

(iii) When actions taken by the owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall keep records for that event that demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping, that confirms conformance with the startup, shutdown, and malfunction plan for that event. In addition, the owner or operator shall keep records of these events as specified in § 63.10(b) (and elsewhere in this part), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control equipment. Furthermore, the owner or operator shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in § 63.10(d)(5).

(iv) If an action taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall record the actions taken for that event and shall report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with § 63.10(d)(5) (unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator (see § 63.10(d)(5)(ii))).

(v) The owner or operator shall keep the written startup, shutdown, and malfunction plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of the affected

source or until the affected source is no longer subject to the provisions of this part. In addition, if the startup, shutdown, and malfunction plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record, to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.

(vi) To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection when requested by the Administrator.

(vii) Based on the results of a determination made under paragraph (e)(2) of this section, the Administrator may require that an owner or operator of an affected source make changes to the startup, shutdown, and malfunction plan for that source. The Administrator may require reasonable revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

(A) Does not address a startup, shutdown, or malfunction event that has occurred;

(B) Fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards; or

(C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

(viii) If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the owner or operator developed the plan, the owner or operator shall revise the startup, shutdown, and

malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control equipment.

(f) *Compliance with nonopacity emission standards*—(1) *Applicability*. The nonopacity emission standards set forth in this part shall apply at all times except during periods of startup, shutdown, and malfunction, and as otherwise specified in an applicable subpart.

(2) *Methods for determining compliance*.

(i) The Administrator will determine compliance with nonopacity emission standards in this part based on the results of performance tests conducted according to the procedures in § 63.7, unless otherwise specified in an applicable subpart of this part.

(ii) The Administrator will determine compliance with nonopacity emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in § 63.6(e) and applicable subparts of this part.

(iii) If an affected source conducts performance testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if—

(A) The performance test was conducted within a reasonable amount of time before an initial performance test is required to be conducted under the relevant standard;

(B) The performance test was conducted under representative operating conditions for the source;

(C) The performance test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e) of this subpart; and

(D) The performance test was appropriately quality-assured, as specified in § 63.7(c) of this subpart.

(iv) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by review of records, inspection of the

source, and other procedures specified in applicable subparts of this part.

(v) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, as specified in paragraph (e) of this section and applicable subparts of this part.

(3) *Finding of compliance*. The Administrator will make a finding concerning an affected source's compliance with a nonopacity emission standard, as specified in paragraphs (f)(1) and (f)(2) of this section, upon obtaining all the compliance information required by the relevant standard (including the written reports of performance test results, monitoring results, and other information, if applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used.

(g) *Use of an alternative nonopacity emission standard*. (1) If, in the Administrator's judgment, an owner or operator of an affected source has established that an alternative means of emission limitation will achieve a reduction in emissions of a hazardous air pollutant from an affected source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative emission standard for purposes of compliance with the promulgated standard. Any FEDERAL REGISTER notice under this paragraph shall be published only after the public is notified and given the opportunity to comment. Such notice will restrict the permission to the stationary source(s) or category(ies) of sources from which the alternative emission standard will achieve equivalent emission reductions. The Administrator will condition permission in such notice on requirements to assure the proper operation and maintenance of equipment and practices required for

compliance with the alternative emission standard and other requirements, including appropriate quality assurance and quality control requirements, that are deemed necessary.

(2) An owner or operator requesting permission under this paragraph shall, unless otherwise specified in an applicable subpart, submit a proposed test plan or the results of testing and monitoring in accordance with § 63.7 and § 63.8, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring. Any testing or monitoring conducted to request permission to use an alternative non-opacity emission standard shall be appropriately quality assured and quality controlled, as specified in § 63.7 and § 63.8.

(3) The Administrator may establish general procedures in an applicable subpart that accomplish the requirements of paragraphs (g)(1) and (g)(2) of this section.

(h) *Compliance with opacity and visible emission standards*—(1) *Applicability*. The opacity and visible emission standards set forth in this part shall apply at all times except during periods of startup, shutdown, and malfunction, and as otherwise specified in an applicable subpart.

(2) *Methods for determining compliance*.

(i) The Administrator will determine compliance with opacity and visible emission standards in this part based on the results of the test method specified in an applicable subpart. Whenever a continuous opacity monitoring system (COMS) is required to be installed to determine compliance with numerical opacity emission standards in this part, compliance with opacity emission standards in this part shall be determined by using the results from the COMS. Whenever an opacity emission test method is not specified, compliance with opacity emission standards in this part shall be determined by conducting observations in accordance with Test Method 9 in appendix A of part 60 of this chapter or the method specified in paragraph (h)(7)(ii) of this section. Whenever a visible emission test method is not specified, compliance with visible emission standards in this part shall be determined by con-

ducting observations in accordance with Test Method 22 in appendix A of part 60 of this chapter.

(ii) [Reserved]

(iii) If an affected source undergoes opacity or visible emission testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if—

(A) The opacity or visible emission test was conducted within a reasonable amount of time before a performance test is required to be conducted under the relevant standard;

(B) The opacity or visible emission test was conducted under representative operating conditions for the source;

(C) The opacity or visible emission test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e) of this subpart; and

(D) The opacity or visible emission test was appropriately quality-assured, as specified in § 63.7(c) of this section.

(3) [Reserved]

(4) *Notification of opacity or visible emission observations*. The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting opacity or visible emission observations in accordance with § 63.9(f), if such observations are required for the source by a relevant standard.

(5) *Conduct of opacity or visible emission observations*. When a relevant standard under this part includes an opacity or visible emission standard, the owner or operator of an affected source shall comply with the following:

(i) For the purpose of demonstrating initial compliance, opacity or visible emission observations shall be conducted concurrently with the initial performance test required in § 63.7 unless one of the following conditions applies:

(A) If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 60 days after achieving the maximum production rate at which a new or reconstructed source will be operated, but not later than 120 days after initial startup of the source, or within 120

days after the effective date of the relevant standard in the case of new sources that start up before the standard's effective date. If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 120 days after the compliance date for an existing or modified source; or

(B) If visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, or within the time period specified in paragraph (h)(5)(i)(A) of this section, the source's owner or operator shall reschedule the opacity or visible emission observations as soon after the initial performance test, or time period, as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. The rescheduled opacity or visible emission observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under § 63.7. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity or visible emission observations from being made concurrently with the initial performance test in accordance with procedures contained in Test Method 9 or Test Method 22 in appendix A of part 60 of this chapter.

(ii) For the purpose of demonstrating initial compliance, the minimum total time of opacity observations shall be 3 hours (30 6-minute averages) for the performance test or other required set of observations (e.g., for fugitive-type emission sources subject only to an opacity emission standard).

(iii) The owner or operator of an affected source to which an opacity or visible emission standard in this part applies shall conduct opacity or visible emission observations in accordance with the provisions of this section, record the results of the evaluation of emissions, and report to the Administrator the opacity or visible emission results in accordance with the provisions of § 63.10(d).

(iv) [Reserved]

(v) Opacity readings of portions of plumes that contain condensed,

uncombined water vapor shall not be used for purposes of determining compliance with opacity emission standards.

(6) *Availability of records.* The owner or operator of an affected source shall make available, upon request by the Administrator, such records that the Administrator deems necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification.

(7) *Use of a continuous opacity monitoring system.* (i) The owner or operator of an affected source required to use a continuous opacity monitoring system (COMS) shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results in accordance with the provisions of § 63.10(e)(4).

(ii) Whenever an opacity emission test method has not been specified in an applicable subpart, or an owner or operator of an affected source is required to conduct Test Method 9 observations (see appendix A of part 60 of this chapter), the owner or operator may submit, for compliance purposes, COMS data results produced during any performance test required under § 63.7 in lieu of Method 9 data. If the owner or operator elects to submit COMS data for compliance with the opacity emission standard, he or she shall notify the Administrator of that decision, in writing, simultaneously with the notification under § 63.7(b) of the date the performance test is scheduled to begin. Once the owner or operator of an affected source has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent performance tests required under § 63.7, unless the owner or operator notifies the Administrator in writing to the contrary not later than with the notification under § 63.7(b) of the date the subsequent performance test is scheduled to begin.

(iii) For the purposes of determining compliance with the opacity emission standard during a performance test required under § 63.7 using COMS data,

the COMS data shall be reduced to 6-minute averages over the duration of the mass emission performance test.

(iv) The owner or operator of an affected source using a COMS for compliance purposes is responsible for demonstrating that he/she has complied with the performance evaluation requirements of § 63.8(e), that the COMS has been properly maintained, operated, and data quality-assured, as specified in § 63.8(c) and § 63.8(d), and that the resulting data have not been altered in any way.

(v) Except as provided in paragraph (h)(7)(ii) of this section, the results of continuous monitoring by a COMS that indicate that the opacity at the time visual observations were made was not in excess of the emission standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the affected source proves that, at the time of the alleged violation, the instrument used was properly maintained, as specified in § 63.8(c), and met Performance Specification 1 in appendix B of part 60 of this chapter, and that the resulting data have not been altered in any way.

(8) *Finding of compliance.* The Administrator will make a finding concerning an affected source's compliance with an opacity or visible emission standard upon obtaining all the compliance information required by the relevant standard (including the written reports of the results of the performance tests required by § 63.7, the results of Test Method 9 or another required opacity or visible emission test method, the observer certification required by paragraph (h)(6) of this section, and the continuous opacity monitoring system results, whichever is/are applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used.

(9) *Adjustment to an opacity emission standard.* (i) If the Administrator finds under paragraph (h)(8) of this section that an affected source is in compliance with all relevant standards for which initial performance tests were conducted under § 63.7, but during the time such performance tests were conducted fails to meet any relevant opacity emission standard, the owner or op-

erator of such source may petition the Administrator to make appropriate adjustment to the opacity emission standard for the affected source. Until the Administrator notifies the owner or operator of the appropriate adjustment, the relevant opacity emission standard remains applicable.

(ii) The Administrator may grant such a petition upon a demonstration by the owner or operator that—

(A) The affected source and its associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests;

(B) The performance tests were performed under the conditions established by the Administrator; and

(C) The affected source and its associated air pollution control equipment were incapable of being adjusted or operated to meet the relevant opacity emission standard.

(iii) The Administrator will establish an adjusted opacity emission standard for the affected source meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity emission standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity emission standard in the FEDERAL REGISTER.

(iv) After the Administrator promulgates an adjusted opacity emission standard for an affected source, the owner or operator of such source shall be subject to the new opacity emission standard, and the new opacity emission standard shall apply to such source during any subsequent performance tests.

(i) *Extension of compliance with emission standards.* (1) Until an extension of compliance has been granted by the Administrator (or a State with an approved permit program) under this paragraph, the owner or operator of an affected source subject to the requirements of this section shall comply with all applicable requirements of this part.

(2) *Extension of compliance for early reductions and other reductions—*(i) *Early*

reductions. Pursuant to section 112(i)(5) of the Act, if the owner or operator of an existing source demonstrates that the source has achieved a reduction in emissions of hazardous air pollutants in accordance with the provisions of subpart D of this part, the Administrator (or the State with an approved permit program) will grant the owner or operator an extension of compliance with specific requirements of this part, as specified in subpart D.

(ii) *Other reductions.* Pursuant to section 112(i)(6) of the Act, if the owner or operator of an existing source has installed best available control technology (BACT) (as defined in section 169(3) of the Act) or technology required to meet a lowest achievable emission rate (LAER) (as defined in section 171 of the Act) prior to the promulgation of an emission standard in this part applicable to such source and the same pollutant (or stream of pollutants) controlled pursuant to the BACT or LAER installation, the Administrator will grant the owner or operator an extension of compliance with such emission standard that will apply until the date 5 years after the date on which such installation was achieved, as determined by the Administrator.

(3) *Request for extension of compliance.* Paragraphs (i)(4) through (i)(7) of this section concern requests for an extension of compliance with a relevant standard under this part (except requests for an extension of compliance under paragraph (i)(2)(i) of this section will be handled through procedures specified in subpart D of this part).

(4)(i)(A) The owner or operator of an existing source who is unable to comply with a relevant standard established under this part pursuant to section 112(d) of the Act may request that the Administrator (or a State, when the State has an approved part 70 permit program and the source is required to obtain a part 70 permit under that program, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) grant an extension allowing the source up to 1 additional year to comply with the standard, if such additional period is necessary for the installation of controls. An additional extension of up to 3

years may be added for mining waste operations, if the 1-year extension of compliance is insufficient to dry and cover mining waste in order to reduce emissions of any hazardous air pollutant. The owner or operator of an affected source who has requested an extension of compliance under this paragraph and who is otherwise required to obtain a title V permit shall apply for such permit or apply to have the source's title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph will be incorporated into the affected source's title V permit according to the provisions of part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever are applicable.

(B) Any request under this paragraph for an extension of compliance with a relevant standard shall be submitted in writing to the appropriate authority not later than 12 months before the affected source's compliance date (as specified in paragraphs (b) and (c) of this section) for sources that are not including emission points in an emissions average, or not later than 18 months before the affected source's compliance date (as specified in paragraphs (b) and (c) of this section) for sources that are including emission points in an emissions average. Emission standards established under this part may specify alternative dates for the submittal of requests for an extension of compliance if alternatives are appropriate for the source categories affected by those standards, e.g., a compliance date specified by the standard is less than 12 (or 18) months after the standard's effective date.

(ii) The owner or operator of an existing source unable to comply with a relevant standard established under this part pursuant to section 112(f) of the Act may request that the Administrator grant an extension allowing the source up to 2 years after the standard's effective date to comply with the standard. The Administrator may grant such an extension if he/she finds that such additional period is necessary for the installation of controls and that steps will be taken during the period of the extension to assure that

the health of persons will be protected from imminent endangerment. Any request for an extension of compliance with a relevant standard under this paragraph shall be submitted in writing to the Administrator not later than 15 calendar days after the effective date of the relevant standard.

(5) The owner or operator of an existing source that has installed BACT or technology required to meet LAER [as specified in paragraph (i)(2)(ii) of this section] prior to the promulgation of a relevant emission standard in this part may request that the Administrator grant an extension allowing the source 5 years from the date on which such installation was achieved, as determined by the Administrator, to comply with the standard. Any request for an extension of compliance with a relevant standard under this paragraph shall be submitted in writing to the Administrator not later than 120 days after the promulgation date of the standard. The Administrator may grant such an extension if he or she finds that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.

(6)(i) The request for a compliance extension under paragraph (i)(4) of this section shall include the following information:

(A) A description of the controls to be installed to comply with the standard;

(B) A compliance schedule, including the date by which each step toward compliance will be reached. At a minimum, the list of dates shall include:

(1) The date by which contracts for emission control systems or process changes for emission control will be awarded, or the date by which orders will be issued for the purchase of component parts to accomplish emission control or process changes;

(2) The date by which on-site construction, installation of emission control equipment, or a process change is to be initiated;

(3) The date by which on-site construction, installation of emission control equipment, or a process change is to be completed; and

(4) The date by which final compliance is to be achieved;

(C) A description of interim emission control steps that will be taken during the extension period, including milestones to assure proper operation and maintenance of emission control and process equipment; and

(D) Whether the owner or operator is also requesting an extension of other applicable requirements (e.g., performance testing requirements).

(ii) The request for a compliance extension under paragraph (i)(5) of this section shall include all information needed to demonstrate to the Administrator's satisfaction that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.

(7) Advice on requesting an extension of compliance may be obtained from the Administrator (or the State with an approved permit program).

(8) *Approval of request for extension of compliance.* Paragraphs (i)(9) through (i)(14) of this section concern approval of an extension of compliance requested under paragraphs (i)(4) through (i)(6) of this section.

(9) Based on the information provided in any request made under paragraphs (i)(4) through (i)(6) of this section, or other information, the Administrator (or the State with an approved permit program) may grant an extension of compliance with an emission standard, as specified in paragraphs (i)(4) and (i)(5) of this section.

(10) The extension will be in writing and will—

(i) Identify each affected source covered by the extension;

(ii) Specify the termination date of the extension;

(iii) Specify the dates by which steps toward compliance are to be taken, if appropriate;

(iv) Specify other applicable requirements to which the compliance extension applies (e.g., performance tests); and

(v)(A) Under paragraph (i)(4), specify any additional conditions that the Administrator (or the State) deems necessary to assure installation of the necessary controls and protection of the

health of persons during the extension period; or

(B) Under paragraph (i)(5), specify any additional conditions that the Administrator deems necessary to assure the proper operation and maintenance of the installed controls during the extension period.

(11) The owner or operator of an existing source that has been granted an extension of compliance under paragraph (i)(10) of this section may be required to submit to the Administrator (or the State with an approved permit program) progress reports indicating whether the steps toward compliance outlined in the compliance schedule have been reached. The contents of the progress reports and the dates by which they shall be submitted will be specified in the written extension of compliance granted under paragraph (i)(10) of this section.

(12)(i) The Administrator (or the State with an approved permit program) will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(i) or (i)(5) of this section. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(iii) Before denying any request for an extension of compliance, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of the Administrator's (or the State's) intention to issue the denial, together with—

(A) Notice of the information and findings on which the intended denial is based; and

(B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator (or the State) before further action on the request.

(iv) The Administrator's final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(13)(i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(ii) of this section. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 15 calendar days after receipt of the original application and within 15 calendar days after receipt of any supplementary information that is submitted.

(ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 15 calendar

days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.

(iii) Before denying any request for an extension of compliance, the Administrator will notify the owner or operator in writing of the Administrator's intention to issue the denial, together with—

(A) Notice of the information and findings on which the intended denial is based; and

(B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator before further action on the request.

(iv) A final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(14) The Administrator (or the State with an approved permit program) may terminate an extension of compliance at an earlier date than specified if any specification under paragraphs (i)(10)(iii) or (i)(10)(iv) of this section is not met.

(15) [Reserved]

(16) The granting of an extension under this section shall not abrogate the Administrator's authority under section 114 of the Act.

(j) *Exemption from compliance with emission standards.* The President may exempt any stationary source from compliance with any relevant standard established pursuant to section 112 of the Act for a period of not more than 2 years if the President determines that the technology to implement such standard is not available and that it is in the national security interests of the United States to do so. An exemption under this paragraph may be extended for 1 or more additional periods, each period not to exceed 2 years.

§ 63.7 Performance testing requirements.

(a) *Applicability and performance test dates.* (1) Unless otherwise specified, this section applies to the owner or operator of an affected source required to do performance testing, or another form of compliance demonstration, under a relevant standard.

(2) If required to do performance testing by a relevant standard, and unless a waiver of performance testing is obtained under this section or the conditions of paragraph (c)(3)(ii)(B) of this section apply, the owner or operator of the affected source shall perform such tests as follows—

(i) Within 180 days after the effective date of a relevant standard for a new source that has an initial startup date before the effective date; or

(ii) Within 180 days after initial startup for a new source that has an initial startup date after the effective date of a relevant standard; or

(iii) Within 180 days after the compliance date specified in an applicable subpart of this part for an existing source subject to an emission standard established pursuant to section 112(d) of the Act, or within 180 days after startup of an existing source if the source begins operation after the effective date of the relevant emission standard; or

(iv) Within 180 days after the compliance date for an existing source subject to an emission standard established pursuant to section 112(f) of the Act; or

(v) Within 180 days after the termination date of the source's extension of compliance for an existing source that obtains an extension of compliance under § 63.6(i); or

(vi) Within 180 days after the compliance date for a new source, subject to an emission standard established pursuant to section 112(f) of the Act, for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of the relevant standard established pursuant to section 112(f) [see § 63.6(b)(4)]; or

(vii) [Reserved]; or

(viii) [Reserved]; or

(ix) When an emission standard promulgated under this part is more stringent than the standard proposed (see § 63.6(b)(3)), the owner or operator of a new or reconstructed source subject to that standard for which construction or reconstruction is commenced between the proposal and promulgation dates of the standard shall comply with performance testing requirements within 180 days after the standard's effective date, or within 180 days after startup of the source, whichever is later. If the promulgated standard is more stringent than the proposed standard, the owner or operator may choose to demonstrate compliance with either the proposed or the promulgated standard. If the owner or operator chooses to comply with the proposed standard initially, the owner or operator shall conduct a second performance test within 3 years and 180 days after the effective date of the standard, or after startup of the source, whichever is later, to demonstrate compliance with the promulgated standard.

(3) The Administrator may require an owner or operator to conduct performance tests at the affected source at any other time when the action is authorized by section 114 of the Act.

(b) *Notification of performance test.* (1) The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin to allow the Administrator, upon request, to review and approve the site-specific test plan required under paragraph (c) of this section and to have an observer present during the test. Observation of the performance test by the Administrator is optional.

(2) In the event the owner or operator is unable to conduct the performance test on the date specified in the notification requirement specified in paragraph (b)(1) of this section, due to unforeseeable circumstances beyond his or her control, the owner or operator shall notify the Administrator within 5 days prior to the scheduled performance test date and specify the date when the performance test is rescheduled. This notification of delay in con-

ducting the performance test shall not relieve the owner or operator of legal responsibility for compliance with any other applicable provisions of this part or with any other applicable Federal, State, or local requirement, nor will it prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(c) *Quality assurance program.* (1) The results of the quality assurance program required in this paragraph will be considered by the Administrator when he/she determines the validity of a performance test.

(2)(i) *Submission of site-specific test plan.* Before conducting a required performance test, the owner or operator of an affected source shall develop and, if requested by the Administrator, shall submit a site-specific test plan to the Administrator for approval. The test plan shall include a test program summary, the test schedule, data quality objectives, and both an internal and external quality assurance (QA) program. Data quality objectives are the pretest expectations of precision, accuracy, and completeness of data.

(ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of test data precision; an example of internal QA is the sampling and analysis of replicate samples.

(iii) The external QA program shall include, at a minimum, application of plans for a test method performance audit (PA) during the performance test. The PA's consist of blind audit samples provided by the Administrator and analyzed during the performance test in order to provide a measure of test data bias. The external QA program may also include systems audits that include the opportunity for on-site evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

(iv) The owner or operator of an affected source shall submit the site-specific test plan to the Administrator upon the Administrator's request at least 60 calendar days before the performance test is scheduled to take place, that is, simultaneously with the

notification of intention to conduct a performance test required under paragraph (b) of this section, or on a mutually agreed upon date.

(v) The Administrator may request additional relevant information after the submittal of a site-specific test plan.

(3) *Approval of site-specific test plan.* (i) The Administrator will notify the owner or operator of approval or intention to deny approval of the site-specific test plan (if review of the site-specific test plan is requested) within 30 calendar days after receipt of the original plan and within 30 calendar days after receipt of any supplementary information that is submitted under paragraph (c)(3)(i)(B) of this section. Before disapproving any site-specific test plan, the Administrator will notify the applicant of the Administrator's intention to disapprove the plan together with—

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present, within 30 calendar days after he/she is notified of the intended disapproval, additional information to the Administrator before final action on the plan.

(ii) In the event that the Administrator fails to approve or disapprove the site-specific test plan within the time period specified in paragraph (c)(3)(i) of this section, the following conditions shall apply:

(A) If the owner or operator intends to demonstrate compliance using the test method(s) specified in the relevant standard, the owner or operator shall conduct the performance test within the time specified in this section using the specified method(s);

(B) If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator shall refrain from conducting the performance test until the Administrator approves the use of the alternative method when the Administrator approves the site-specific test plan (if review of the site-specific test plan is requested) or until after the alternative method is approved (see paragraph (f) of this section). If the Ad-

ministrator does not approve the site-specific test plan (if review is requested) or the use of the alternative method within 30 days before the test is scheduled to begin, the performance test dates specified in paragraph (a) of this section may be extended such that the owner or operator shall conduct the performance test within 60 calendar days after the Administrator approves the site-specific test plan or after use of the alternative method is approved. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

(iii) Neither the submission of a site-specific test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall—

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(4)(i) *Performance test method audit program.* The owner or operator shall analyze performance audit (PA) samples during each performance test. The owner or operator shall request performance audit materials 45 days prior to the test date. Cylinder audit gases may be obtained by contacting the Cylinder Audit Coordinator, Quality Assurance Division (MD-77B), Atmospheric Research and Exposure Assessment Laboratory (AREAL), U.S. EPA, Research Triangle Park, North Carolina 27711. All other audit materials may be obtained by contacting the Source Test Audit Coordinator, Quality Assurance Division (MD-77B), AREAL, U.S. EPA, Research Triangle Park, North Carolina 27711.

(ii) The Administrator will have sole discretion to require any subsequent remedial actions of the owner or operator based on the PA results.

(iii) If the Administrator fails to provide required PA materials to an owner or operator of an affected source in time to analyze the PA samples during a performance test, the requirement to conduct a PA under this paragraph shall be waived for such source for that performance test. Waiver under this paragraph of the requirement to conduct a PA for a particular performance test does not constitute a waiver of the requirement to conduct a PA for future required performance tests.

(d) *Performance testing facilities.* If required to do performance testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source, shall provide performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such source. This includes:

(i) Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and

(ii) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures;

(2) Safe sampling platform(s);

(3) Safe access to sampling platform(s);

(4) Utilities for sampling and testing equipment; and

(5) Any other facilities that the Administrator deems necessary for safe and adequate testing of a source.

(e) *Conduct of performance tests.* (1) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (i.e., performance based on normal operating conditions) of the affected source. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test, nor shall emissions in excess of the level of the relevant standard during periods of startup, shutdown, and malfunction be considered a violation of the relevant standard unless otherwise specified in the relevant standard or a determination of noncompliance is made under

§ 63.6(e). Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator—

(i) Specifies or approves, in specific cases, the use of a test method with minor changes in methodology; or

(ii) Approves the use of an alternative test method, the results of which the Administrator has determined to be adequate for indicating whether a specific affected source is in compliance; or

(iii) Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors; or

(iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard.

(3) Unless otherwise specified in a relevant standard or test method, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the relevant standard. For the purpose of determining compliance with a relevant standard, the arithmetic mean of the results of the three runs shall apply. Upon receiving approval from the Administrator, results of a test run may be replaced with results of an additional test run in the event that—

(i) A sample is accidentally lost after the testing team leaves the site; or

(ii) Conditions occur in which one of the three runs must be discontinued because of forced shutdown; or

(iii) Extreme meteorological conditions occur; or

(iv) Other circumstances occur that are beyond the owner or operator's control.

(4) Nothing in paragraphs (e)(1) through (e)(3) of this section shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(f) *Use of an alternative test method—*

(1) *General.* Until permission to use an alternative test method has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) The owner or operator of an affected source required to do performance testing by a relevant standard may use an alternative test method from that specified in the standard provided that the owner or operator—

(i) Notifies the Administrator of his or her intention to use an alternative test method not later than with the submittal of the site-specific test plan (if requested by the Administrator) or at least 60 days before the performance test is scheduled to begin if a site-specific test plan is not submitted;

(ii) Uses Method 301 in appendix A of this part to validate the alternative test method; and

(iii) Submits the results of the Method 301 validation process along with the notification of intention and the justification for not using the specified test method. The owner or operator may submit the information required in this paragraph well in advance of the deadline specified in paragraph (f)(2)(i) of this section to ensure a timely review by the Administrator in order to meet the performance test date specified in this section or the relevant standard.

(3) The Administrator will determine whether the owner or operator's validation of the proposed alternative test method is adequate when the Administrator approves or disapproves the site-specific test plan required under paragraph (c) of this section. If the Administrator finds reasonable grounds to dispute the results obtained by the Method 301 validation process, the Administrator may require the use of a test method specified in a relevant standard.

(4) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative test method

for the purposes of demonstrating compliance with a relevant standard, the Administrator may require the use of a test method specified in a relevant standard.

(5) If the owner or operator uses an alternative test method for an affected source during a required performance test, the owner or operator of such source shall continue to use the alternative test method for subsequent performance tests at that affected source until he or she receives approval from the Administrator to use another test method as allowed under § 63.7(f).

(6) Neither the validation and approval process nor the failure to validate an alternative test method shall abrogate the owner or operator's responsibility to comply with the requirements of this part.

(g) *Data analysis, recordkeeping, and reporting.* (1) Unless otherwise specified in a relevant standard or test method, or as otherwise approved by the Administrator in writing, results of a performance test shall include the analysis of samples, determination of emissions, and raw data. A performance test is "completed" when field sample collection is terminated. The owner or operator of an affected source shall report the results of the performance test to the Administrator before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator (see § 63.9(i)). The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h). Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the appropriate permitting authority.

(2) [Reserved]

(3) For a minimum of 5 years after a performance test is conducted, the owner or operator shall retain and make available, upon request, for inspection by the Administrator the

records or results of such performance test and other data needed to determine emissions from an affected source.

(h) *Waiver of performance tests.* (1) Until a waiver of a performance testing requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

(2) Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

(3) *Request to waive a performance test.*

(i) If a request is made for an extension of compliance under § 63.6(i), the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested or if the owner or operator has requested an extension of compliance and the Administrator is still considering that request, the application for a waiver of an initial performance test shall be submitted at least 60 days before the performance test if the site-specific test plan under paragraph (c) of this section is not submitted.

(ii) If an application for a waiver of a subsequent performance test is made, the application may accompany any required compliance progress report, compliance status report, or excess emissions and continuous monitoring system performance report [such as those required under § 63.6(i), § 63.9(h), and § 63.10(e) or specified in a relevant standard or in the source's title V permit], but it shall be submitted at least 60 days before the performance test if the site-specific test plan required under paragraph (c) of this section is not submitted.

(iii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or

the impracticality, of the affected source performing the required test.

(4) *Approval of request to waive performance test.* The Administrator will approve or deny a request for a waiver of a performance test made under paragraph (h)(3) of this section when he/she—

(i) Approves or denies an extension of compliance under § 63.6(i)(8); or

(ii) Approves or disapproves a site-specific test plan under § 63.7(c)(3); or

(iii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or

(iv) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.

(5) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

§ 63.8 Monitoring requirements.

(a) *Applicability.* (1)(i) Unless otherwise specified in a relevant standard, this section applies to the owner or operator of an affected source required to do monitoring under that standard.

(ii) Relevant standards established under this part will specify monitoring systems, methods, or procedures, monitoring frequency, and other pertinent requirements for source(s) regulated by those standards. This section specifies general monitoring requirements such as those governing the conduct of monitoring and requests to use alternative monitoring methods. In addition, this section specifies detailed requirements that apply to affected sources required to use continuous monitoring systems (CMS) under a relevant standard.

(2) For the purposes of this part, all CMS required under relevant standards shall be subject to the provisions of this section upon promulgation of performance specifications for CMS as specified in the relevant standard or otherwise by the Administrator.

(3) [Reserved]

(4) Additional monitoring requirements for control devices used to comply with provisions in relevant standards of this part are specified in §63.11.

(b) *Conduct of monitoring.* (1) Monitoring shall be conducted as set forth in this section and the relevant standard(s) unless the Administrator—

(i) Specifies or approves the use of minor changes in methodology for the specified monitoring requirements and procedures; or

(ii) Approves the use of alternatives to any monitoring requirements or procedures.

(iii) Owners or operators with flares subject to §63.11(b) are not subject to the requirements of this section unless otherwise specified in the relevant standard.

(2)(i) When the effluents from a single affected source, or from two or more affected sources, are combined before being released to the atmosphere, the owner or operator shall install an applicable CMS on each effluent.

(ii) If the relevant standard is a mass emission standard and the effluent from one affected source is released to the atmosphere through more than one point, the owner or operator shall install an applicable CMS at each emission point unless the installation of fewer systems is—

(A) Approved by the Administrator; or

(B) Provided for in a relevant standard (e.g., instead of requiring that a CMS be installed at each emission point before the effluents from those points are channeled to a common control device, the standard specifies that only one CMS is required to be installed at the vent of the control device).

(3) When more than one CMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CMS. However, when one CMS is used as a backup to another CMS, the owner or operator shall report the results from the CMS used to meet the monitoring requirements of this part. If both such CMS are used during a particular reporting period to meet the monitoring requirements of

this part, then the owner or operator shall report the results from each CMS for the relevant compliance period.

(c) *Operation and maintenance of continuous monitoring systems.* (1) The owner or operator of an affected source shall maintain and operate each CMS as specified in this section, or in a relevant standard, and in a manner consistent with good air pollution control practices.

(i) The owner or operator of an affected source shall ensure the immediate repair or replacement of CMS parts to correct “routine” or otherwise predictable CMS malfunctions as defined in the source’s startup, shutdown, and malfunction plan required by §63.6(e)(3). The owner or operator shall keep the necessary parts for routine repairs of the affected equipment readily available. If the plan is followed and the CMS repaired immediately, this action shall be reported in the semi-annual startup, shutdown, and malfunction report required under §63.10(d)(5)(i).

(ii) For those malfunctions or other events that affect the CMS and are not addressed by the startup, shutdown, and malfunction plan, the owner or operator shall report actions that are not consistent with the startup, shutdown, and malfunction plan within 24 hours after commencing actions inconsistent with the plan. The owner or operator shall send a follow-up report within 2 weeks after commencing actions inconsistent with the plan that either certifies that corrections have been made or includes a corrective action plan and schedule. The owner or operator shall provide proof that repair parts have been ordered or any other records that would indicate that the delay in making repairs is beyond his or her control.

(iii) The Administrator’s determination of whether acceptable operation and maintenance procedures are being used will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records, manufacturing recommendations and specifications, and inspection of the CMS. Operation and maintenance procedures written by the CMS manufacturer and other guidance also

can be used to maintain and operate each CMS.

(2) All CMS shall be installed such that representative measurements of emissions or process parameters from the affected source are obtained. In addition, CEMS shall be located according to procedures contained in the applicable performance specification(s).

(3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under § 63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(4) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CMS, including COMS and CEMS, shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(i) All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(ii) All CEMS for measuring emissions other than opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(5) Unless otherwise approved by the Administrator, minimum procedures for COMS shall include a method for producing a simulated zero opacity condition and an upscale (high-level) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of all the analyzer's internal optical surfaces and all electronic circuitry, including the lamp and photodetector assembly normally used in the measurement of opacity.

(6) The owner or operator of a CMS installed in accordance with the provisions of this part and the applicable CMS performance specification(s) shall

check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure specified in the performance evaluation plan developed under paragraphs (e)(3)(i) and (e)(3)(ii) of this section. The zero (low-level) and high-level calibration drifts shall be adjusted, at a minimum, whenever the 24-hour zero (low-level) drift exceeds two times the limits of the applicable performance specification(s) specified in the relevant standard. The system must allow the amount of excess zero (low-level) and high-level drift measured at the 24-hour interval checks to be recorded and quantified, whenever specified. For COMS, all optical and instrumental surfaces exposed to the effluent gases shall be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical surfaces and instrumental surfaces shall be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent opacity.

(7)(i) A CMS is out of control if—

(A) The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or

(B) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or

(C) The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.

(ii) When the CMS is out of control, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the owner or operator conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under this part. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system

is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calculations, or to meet any data availability requirement established under this part.

(8) The owner or operator of a CMS that is out of control as defined in paragraph (c)(7) of this section shall submit all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in § 63.10(e)(3).

(d) *Quality control program.* (1) The results of the quality control program required in this paragraph will be considered by the Administrator when he/she determines the validity of monitoring data.

(2) The owner or operator of an affected source that is required to use a CMS and is subject to the monitoring requirements of this section and a relevant standard shall develop and implement a CMS quality control program. As part of the quality control program, the owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in paragraph (e)(3)(i) of this section, according to the procedures specified in paragraph (e). In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the following operations:

- (i) Initial and any subsequent calibration of the CMS;
- (ii) Determination and adjustment of the calibration drift of the CMS;
- (iii) Preventive maintenance of the CMS, including spare parts inventory;
- (iv) Data recording, calculations, and reporting;
- (v) Accuracy audit procedures, including sampling and analysis methods; and
- (vi) Program of corrective action for a malfunctioning CMS.

(3) The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be

made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and record-keeping efforts.

(e) *Performance evaluation of continuous monitoring systems—(1) General.* When required by a relevant standard, and at any other time the Administrator may require under section 114 of the Act, the owner or operator of an affected source being monitored shall conduct a performance evaluation of the CMS. Such performance evaluation shall be conducted according to the applicable specifications and procedures described in this section or in the relevant standard.

(2) *Notification of performance evaluation.* The owner or operator shall notify the Administrator in writing of the date of the performance evaluation simultaneously with the notification of the performance test date required under § 63.7(b) or at least 60 days prior to the date the performance evaluation is scheduled to begin if no performance test is required.

(3)(i) *Submission of site-specific performance evaluation test plan.* Before conducting a required CMS performance evaluation, the owner or operator of an affected source shall develop and submit a site-specific performance evaluation test plan to the Administrator for approval upon request. The performance evaluation test plan shall include the evaluation program objectives, an evaluation program summary, the performance evaluation schedule, data quality objectives, and both an internal and external QA program. Data quality objectives are the pre-evaluation expectations of precision, accuracy, and completeness of data.

(ii) The internal QA program shall include, at a minimum, the activities

planned by routine operators and analysts to provide an assessment of CMS performance. The external QA program shall include, at a minimum, systems audits that include the opportunity for on-site evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

(iii) The owner or operator of an affected source shall submit the site-specific performance evaluation test plan to the Administrator (if requested) at least 60 days before the performance test or performance evaluation is scheduled to begin, or on a mutually agreed upon date, and review and approval of the performance evaluation test plan by the Administrator will occur with the review and approval of the site-specific test plan (if review of the site-specific test plan is requested).

(iv) The Administrator may request additional relevant information after the submittal of a site-specific performance evaluation test plan.

(v) In the event that the Administrator fails to approve or disapprove the site-specific performance evaluation test plan within the time period specified in § 63.7(c)(3), the following conditions shall apply:

(A) If the owner or operator intends to demonstrate compliance using the monitoring method(s) specified in the relevant standard, the owner or operator shall conduct the performance evaluation within the time specified in this subpart using the specified method(s);

(B) If the owner or operator intends to demonstrate compliance by using an alternative to a monitoring method specified in the relevant standard, the owner or operator shall refrain from conducting the performance evaluation until the Administrator approves the use of the alternative method. If the Administrator does not approve the use of the alternative method within 30 days before the performance evaluation is scheduled to begin, the performance evaluation deadlines specified in paragraph (e)(4) of this section may be extended such that the owner or operator shall conduct the performance evaluation within 60 calendar days after the Administrator approves the use of the alternative method. Notwithstanding

the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance evaluation as required in this section (without the Administrator's prior approval of the site-specific performance evaluation test plan) if he/she subsequently chooses to use the specified monitoring method(s) instead of an alternative.

(vi) Neither the submission of a site-specific performance evaluation test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall—

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(4) *Conduct of performance evaluation and performance evaluation dates.* The owner or operator of an affected source shall conduct a performance evaluation of a required CMS during any performance test required under § 63.7 in accordance with the applicable performance specification as specified in the relevant standard. Notwithstanding the requirement in the previous sentence, if the owner or operator of an affected source elects to submit COMS data for compliance with a relevant opacity emission standard as provided under § 63.6(h)(7), he/she shall conduct a performance evaluation of the COMS as specified in the relevant standard, before the performance test required under § 63.7 is conducted in time to submit the results of the performance evaluation as specified in paragraph (e)(5)(ii) of this section. If a performance test is not required, or the requirement for a performance test has been waived under § 63.7(h), the owner or operator of an affected source shall conduct the performance evaluation not later than 180 days after the appropriate compliance date for the affected source, as specified in § 63.7(a), or as otherwise specified in the relevant standard.

(5) *Reporting performance evaluation results.* (i) The owner or operator shall

furnish the Administrator a copy of a written report of the results of the performance evaluation simultaneously with the results of the performance test required under § 63.7 or within 60 days of completion of the performance evaluation if no test is required, unless otherwise specified in a relevant standard. The Administrator may request that the owner or operator submit the raw data from a performance evaluation in the report of the performance evaluation results.

(ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation under this paragraph. The copies shall be provided at least 15 calendar days before the performance test required under § 63.7 is conducted.

(f) *Use of an alternative monitoring method*—(1) *General.* Until permission to use an alternative monitoring method has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this part including, but not limited to, the following:

(i) Alternative monitoring requirements when installation of a CMS specified by a relevant standard would not provide accurate measurements due to liquid water or other interferences caused by substances within the effluent gases;

(ii) Alternative monitoring requirements when the affected source is infrequently operated;

(iii) Alternative monitoring requirements to accommodate CEMS that require additional measurements to correct for stack moisture conditions;

(iv) Alternative locations for installing CMS when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;

(v) Alternate methods for converting pollutant concentration measurements to units of the relevant standard;

(vi) Alternate procedures for performing daily checks of zero (low-level) and high-level drift that do not involve use of high-level gases or test cells;

(vii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified by any relevant standard;

(viii) Alternative CMS that do not meet the design or performance requirements in this part, but adequately demonstrate a definite and consistent relationship between their measurements and the measurements of opacity by a system complying with the requirements as specified in the relevant standard. The Administrator may require that such demonstration be performed for each affected source; or

(ix) Alternative monitoring requirements when the effluent from a single affected source or the combined effluent from two or more affected sources is released to the atmosphere through more than one point.

(3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section or in the relevant standard. If the results of the specified and alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(4)(i) *Request to use alternative monitoring method.* An owner or operator who wishes to use an alternative monitoring method shall submit an application to the Administrator as described in paragraph (f)(4)(ii) of this section, below. The application may be submitted at any time provided that the monitoring method is not used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring method is to be used to demonstrate compliance with a relevant standard, the application shall be submitted not later than with the site-specific test plan required in § 63.7(c) (if requested) or with the

site-specific performance evaluation plan (if requested) or at least 60 days before the performance evaluation is scheduled to begin.

(ii) The application shall contain a description of the proposed alternative monitoring system and a performance evaluation test plan, if required, as specified in paragraph (e)(3) of this section. In addition, the application shall include information justifying the owner or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (f)(4)(i) above to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this section or the relevant standard.

(5) *Approval of request to use alternative monitoring method.* (i) The Administrator will notify the owner or operator of approval or intention to deny approval of the request to use an alternative monitoring method within 30 calendar days after receipt of the original request and within 30 calendar days after receipt of any supplementary information that is submitted. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intention to disapprove the request together with—

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(ii) The Administrator may establish general procedures and criteria in a relevant standard to accomplish the re-

quirements of paragraph (f)(5)(i) of this section.

(iii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (f)(5)(i) of this section, the owner or operator of such source shall continue to use the alternative monitoring method until he or she receives approval from the Administrator to use another monitoring method as allowed by § 63.8(f).

(6) *Alternative to the relative accuracy test.* An alternative to the relative accuracy test for CEMS specified in a relevant standard may be requested as follows:

(i) *Criteria for approval of alternative procedures.* An alternative to the test method for determining relative accuracy is available for affected sources with emission rates demonstrated to be less than 50 percent of the relevant standard. The owner or operator of an affected source may petition the Administrator under paragraph (f)(6)(ii) of this section to substitute the relative accuracy test in section 7 of Performance Specification 2 with the procedures in section 10 if the results of a performance test conducted according to the requirements in § 63.7, or other tests performed following the criteria in § 63.7, demonstrate that the emission rate of the pollutant of interest in the units of the relevant standard is less than 50 percent of the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the owner or operator may petition the Administrator to substitute the relative accuracy test with the procedures in section 10 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the CEMS is used continuously to determine compliance with the relevant standard.

(ii) *Petition to use alternative to relative accuracy test.* The petition to use an alternative to the relative accuracy test shall include a detailed description of the procedures to be applied, the location and the procedure for conducting the alternative, the concentration or response levels of the alternative

relative accuracy materials, and the other equipment checks included in the alternative procedure(s). The Administrator will review the petition for completeness and applicability. The Administrator's determination to approve an alternative will depend on the intended use of the CEMS data and may require specifications more stringent than in Performance Specification 2.

(iii) *Rescission of approval to use alternative to relative accuracy test.* The Administrator will review the permission to use an alternative to the CEMS relative accuracy test and may rescind such permission if the CEMS data from a successful completion of the alternative relative accuracy procedure indicate that the affected source's emissions are approaching the level of the relevant standard. The criterion for reviewing the permission is that the collection of CEMS data shows that emissions have exceeded 70 percent of the relevant standard for any averaging period, as specified in the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the criterion for reviewing the permission is that the collection of CEMS data shows that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for any averaging period, as specified in the relevant standard. The owner or operator of the affected source shall maintain records and determine the level of emissions relative to the criterion for permission to use an alternative for relative accuracy testing. If this criterion is exceeded, the owner or operator shall notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increased emissions. The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 7 of Performance Specification 2.

(g) *Reduction of monitoring data.* (1) The owner or operator of each CMS shall reduce the monitoring data as specified in this paragraph. In addition, each relevant standard may contain additional requirements for reducing monitoring data. When additional re-

quirements are specified in a relevant standard, the standard will identify any unnecessary or duplicated requirements in this paragraph that the owner or operator need not comply with.

(2) The owner or operator of each COMS shall reduce all data to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. Data from CEMS for measurement other than opacity, unless otherwise specified in the relevant standard, shall be reduced to 1-hour averages computed from four or more data points equally spaced over each 1-hour period, except during periods when calibration, quality assurance, or maintenance activities pursuant to provisions of this part are being performed. During these periods, a valid hourly average shall consist of at least two data points with each representing a 15-minute period. Alternatively, an arithmetic or integrated 1-hour average of CEMS data may be used. Time periods for averaging are defined in §63.2.

(3) The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O₂ or ng/J of pollutant).

(4) All emission data shall be converted into units of the relevant standard for reporting purposes using the conversion procedures specified in that standard. After conversion into units of the relevant standard, the data may be rounded to the same number of significant digits as used in that standard to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).

(5) Monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any data average computed under this part.

§63.9 Notification requirements.

(a) *Applicability and general information.* (1) The requirements in this section apply to owners and operators of affected sources that are subject to the provisions of this part, unless specified otherwise in a relevant standard.

(2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

(3) If any State requires a notice that contains all the information required in a notification listed in this section, the owner or operator may send the Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.

(4)(i) Before a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).

(ii) After a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each notification submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any notifications at its discretion.

(b) *Initial notifications.* (1)(i) The requirements of this paragraph apply to the owner or operator of an affected source when such source becomes subject to a relevant standard.

(ii) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such

source shall be subject to the notification requirements of this section.

(iii) Affected sources that are required under this paragraph to submit an initial notification may use the application for approval of construction or reconstruction under § 63.5(d) of this subpart, if relevant, to fulfill the initial notification requirements of this paragraph.

(2) The owner or operator of an affected source that has an initial startup before the effective date of a relevant standard under this part shall notify the Administrator in writing that the source is subject to the relevant standard. The notification, which shall be submitted not later than 120 calendar days after the effective date of the relevant standard (or within 120 calendar days after the source becomes subject to the relevant standard), shall provide the following information:

(i) The name and address of the owner or operator;

(ii) The address (i.e., physical location) of the affected source;

(iii) An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;

(iv) A brief description of the nature, size, design, and method of operation of the source, including its operating design capacity and an identification of each point of emission for each hazardous air pollutant, or if a definitive identification is not yet possible, a preliminary identification of each point of emission for each hazardous air pollutant; and

(v) A statement of whether the affected source is a major source or an area source.

(3) The owner or operator of a new or reconstructed affected source, or a source that has been reconstructed such that it is an affected source, that has an initial startup after the effective date of a relevant standard under this part and for which an application for approval of construction or reconstruction is not required under § 63.5(d), shall notify the Administrator in writing that the source is subject to the relevant standard no later than 120 days after initial startup. The notification shall provide all the information

required in paragraphs (b)(2)(i) through (b)(2)(v) of this section, delivered or postmarked with the notification required in paragraph (b)(5).

(4) The owner or operator of a new or reconstructed major affected source that has an initial startup after the effective date of a relevant standard under this part and for which an application for approval of construction or reconstruction is required under § 63.5(d) shall provide the following information in writing to the Administrator:

(i) A notification of intention to construct a new major affected source, reconstruct a major affected source, or reconstruct a major source such that the source becomes a major affected source with the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i);

(ii) A notification of the date when construction or reconstruction was commenced, submitted simultaneously with the application for approval of construction or reconstruction, if construction or reconstruction was commenced before the effective date of the relevant standard;

(iii) A notification of the date when construction or reconstruction was commenced, delivered or postmarked not later than 30 days after such date, if construction or reconstruction was commenced after the effective date of the relevant standard;

(iv) A notification of the anticipated date of startup of the source, delivered or postmarked not more than 60 days nor less than 30 days before such date; and

(v) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(5) After the effective date of any relevant standard established by the Administrator under this part, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, an owner or operator who intends to construct a new affected source or reconstruct an affected source subject to such standard, or reconstruct a source such that it becomes an affected source subject to such standard, shall notify the Administrator, in writing, of the

intended construction or reconstruction. The notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date of the relevant standard) if the construction or reconstruction commences after the effective date of a relevant standard promulgated in this part. The notification shall be submitted as soon as practicable before startup but no later than 60 days after the effective date of a relevant standard promulgated in this part if the construction or reconstruction had commenced and initial startup had not occurred before the standard's effective date. The notification shall include all the information required for an application for approval of construction or reconstruction as specified in § 63.5(d). For major sources, the application for approval of construction or reconstruction may be used to fulfill the requirements of this paragraph.

(c) *Request for extension of compliance.* If the owner or operator of an affected source cannot comply with a relevant standard by the applicable compliance date for that source, or if the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of this subpart, he/she may submit to the Administrator (or the State with an approved permit program) a request for an extension of compliance as specified in § 63.6(i)(4) through § 63.6(i)(6).

(d) *Notification that source is subject to special compliance requirements.* An owner or operator of a new source that is subject to special compliance requirements as specified in § 63.6(b)(3) and § 63.6(b)(4) shall notify the Administrator of his/her compliance obligations not later than the notification dates established in paragraph (b) of this section for new sources that are not subject to the special provisions.

(e) *Notification of performance test.* The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin to allow the Administrator to review and approve the site-specific test plan required

under § 63.7(c), if requested by the Administrator, and to have an observer present during the test.

(f) *Notification of opacity and visible emission observations.* The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting the opacity or visible emission observations specified in § 63.6(h)(5), if such observations are required for the source by a relevant standard. The notification shall be submitted with the notification of the performance test date, as specified in paragraph (e) of this section, or if no performance test is required or visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, the owner or operator shall deliver or postmark the notification not less than 30 days before the opacity or visible emission observations are scheduled to take place.

(g) *Additional notification requirements for sources with continuous monitoring systems.* The owner or operator of an affected source required to use a CMS by a relevant standard shall furnish the Administrator written notification as follows:

(1) A notification of the date the CMS performance evaluation under § 63.8(e) is scheduled to begin, submitted simultaneously with the notification of the performance test date required under § 63.7(b). If no performance test is required, or if the requirement to conduct a performance test has been waived for an affected source under § 63.7(h), the owner or operator shall notify the Administrator in writing of the date of the performance evaluation at least 60 calendar days before the evaluation is scheduled to begin;

(2) A notification that COMS data results will be used to determine compliance with the applicable opacity emission standard during a performance test required by § 63.7 in lieu of Method 9 or other opacity emissions test method data, as allowed by § 63.6(h)(7)(ii), if compliance with an opacity emission standard is required for the source by a relevant standard. The notification shall be submitted at least 60 calendar

days before the performance test is scheduled to begin; and

(3) A notification that the criterion necessary to continue use of an alternative to relative accuracy testing, as provided by § 63.8(f)(6), has been exceeded. The notification shall be delivered or postmarked not later than 10 days after the occurrence of such exceedance, and it shall include a description of the nature and cause of the increased emissions.

(h) *Notification of compliance status.* (1) The requirements of paragraphs (h)(2) through (h)(4) of this section apply when an affected source becomes subject to a relevant standard.

(2)(i) Before a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit to the Administrator a notification of compliance status, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with the relevant standard. The notification shall list—

(A) The methods that were used to determine compliance;

(B) The results of any performance tests, opacity or visible emission observations, continuous monitoring system (CMS) performance evaluations, and/or other monitoring procedures or methods that were conducted;

(C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods;

(D) The type and quantity of hazardous air pollutants emitted by the source (or surrogate pollutants if specified in the relevant standard), reported in units and averaging times and in accordance with the test methods specified in the relevant standard;

(E) An analysis demonstrating whether the affected source is a major source or an area source (using the emissions data generated for this notification);

(F) A description of the air pollution control equipment (or method) for each emission point, including each control device (or method) for each hazardous air pollutant and the control efficiency

(percent) for each control device (or method); and

(G) A statement by the owner or operator of the affected existing, new, or reconstructed source as to whether the source has complied with the relevant standard or other requirements.

(ii) The notification shall be sent before the close of business on the 60th day following the completion of the relevant compliance demonstration activity specified in the relevant standard (unless a different reporting period is specified in a relevant standard, in which case the letter shall be sent before the close of business on the day the report of the relevant testing or monitoring results is required to be delivered or postmarked). For example, the notification shall be sent before close of business on the 60th (or other required) day following completion of the initial performance test and again before the close of business on the 60th (or other required) day following the completion of any subsequent required performance test. If no performance test is required but opacity or visible emission observations are required to demonstrate compliance with an opacity or visible emission standard under this part, the notification of compliance status shall be sent before close of business on the 30th day following the completion of opacity or visible emission observations.

(3) After a title V permit has been issued to the owner or operator of an affected source, the owner or operator of such source shall comply with all requirements for compliance status reports contained in the source's title V permit, including reports required under this part. After a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity specified in the relevant standard.

(4) [Reserved]

(5) If an owner or operator of an affected source submits estimates or preliminary information in the application for approval of construction or re-

construction required in §63.5(d) in place of the actual emissions data or control efficiencies required in paragraphs (d)(1)(ii)(H) and (d)(2) of §63.5, the owner or operator shall submit the actual emissions data and other correct information as soon as available but no later than with the initial notification of compliance status required in this section.

(6) Advice on a notification of compliance status may be obtained from the Administrator.

(i) *Adjustment to time periods or postmark deadlines for submittal and review of required communications.* (1)(i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (i)(2) and (i)(3) of this section, the owner or operator of an affected source remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (i)(2) and (i)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15

calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

(j) *Change in information already provided.* Any change in the information already provided under this section shall be provided to the Administrator in writing within 15 calendar days after the change.

§ 63.10 Recordkeeping and reporting requirements.

(a) *Applicability and general information.* (1) The requirements of this section apply to owners or operators of affected sources who are subject to the provisions of this part, unless specified otherwise in a relevant standard.

(2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

(3) If any State requires a report that contains all the information required in a report listed in this section, an owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

(4)(i) Before a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).

(ii) After a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the

owner or operator shall send a copy of each report submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any reports at its discretion.

(5) If an owner or operator of an affected source in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. For each relevant standard established pursuant to section 112 of the Act, the allowance in the previous sentence applies in each State beginning 1 year after the affected source's compliance date for that standard. Procedures governing the implementation of this provision are specified in § 63.9(i).

(6) If an owner or operator supervises one or more stationary sources affected by more than one standard established pursuant to section 112 of the Act, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required for each source shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the latest compliance date for any relevant standard established pursuant to section 112 of the Act for any such affected source(s). Procedures governing the implementation of this provision are specified in § 63.9(i).

(7) If an owner or operator supervises one or more stationary sources affected by standards established pursuant to section 112 of the Act (as amended November 15, 1990) and standards set under part 60, part 61, or both such parts of this chapter, he/she may arrange by mutual agreement between

the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required by each relevant (i.e., applicable) standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the relevant section 112 standard, or 1 year after the stationary source is required to be in compliance with the applicable part 60 or part 61 standard, whichever is latest. Procedures governing the implementation of this provision are specified in § 63.9(i).

(b) *General recordkeeping requirements.*

(1) The owner or operator of an affected source subject to the provisions of this part shall maintain files of all information (including all reports and notifications) required by this part recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.

(2) The owner or operator of an affected source subject to the provisions of this part shall maintain relevant records for such source of—

(i) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment);

(ii) The occurrence and duration of each malfunction of the air pollution control equipment;

(iii) All maintenance performed on the air pollution control equipment;

(iv) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3));

(v) All information necessary to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)) when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);

(vi) Each period during which a CMS is malfunctioning or inoperative (including out-of-control periods);

(vii) All required measurements needed to demonstrate compliance with a relevant standard (including, but not limited to, 15-minute averages of CMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);

(viii) All results of performance tests, CMS performance evaluations, and opacity and visible emission observations;

(ix) All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;

(x) All CMS calibration checks;

(xi) All adjustments and maintenance performed on CMS;

(xii) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements under this part, if the source has been granted a waiver under paragraph (f) of this section;

(xiii) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under § 63.8(f)(6); and

(xiv) All documentation supporting initial notifications and notifications of compliance status under § 63.9.

(3) *Recordkeeping requirement for applicability determinations.* If an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants is not subject to a relevant standard or other requirement established under this part, the owner or operator shall keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination shall include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) shall be sufficiently detailed to allow the Administrator to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis shall be performed in accordance with requirements established in subparts of this part for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with EPA guidance materials published to assist sources in making applicability determinations under section 112, if any.

(c) *Additional recordkeeping requirements for sources with continuous monitoring systems.* In addition to complying with the requirements specified in paragraphs (b)(1) and (b)(2) of this section, the owner or operator of an affected source required to install a CMS by a relevant standard shall maintain records for such source of—

(1) All required CMS measurements (including monitoring data recorded during unavoidable CMS breakdowns and out-of-control periods);

(2)–(4) [Reserved]

(5) The date and time identifying each period during which the CMS was inoperative except for zero (low-level) and high-level checks;

(6) The date and time identifying each period during which the CMS was out of control, as defined in § 63.8(c)(7);

(7) The specific identification (i.e., the date and time of commencement

and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during startups, shutdowns, and malfunctions of the affected source;

(8) The specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;

(9) [Reserved]

(10) The nature and cause of any malfunction (if known);

(11) The corrective action taken or preventive measures adopted;

(12) The nature of the repairs or adjustments to the CMS that was inoperative or out of control;

(13) The total process operating time during the reporting period; and

(14) All procedures that are part of a quality control program developed and implemented for CMS under § 63.8(d).

(15) In order to satisfy the requirements of paragraphs (c)(10) through (c)(12) of this section and to avoid duplicative recordkeeping efforts, the owner or operator may use the affected source's startup, shutdown, and malfunction plan or records kept to satisfy the recordkeeping requirements of the startup, shutdown, and malfunction plan specified in § 63.6(e), provided that such plan and records adequately address the requirements of paragraphs (c)(10) through (c)(12).

(d) *General reporting requirements.* (1) Notwithstanding the requirements in this paragraph or paragraph (e) of this section, the owner or operator of an affected source subject to reporting requirements under this part shall submit reports to the Administrator in accordance with the reporting requirements in the relevant standard(s).

(2) *Reporting results of performance tests.* Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of any performance test under § 63.7 to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator

shall report the results of a required performance test to the appropriate permitting authority. The owner or operator of an affected source shall report the results of the performance test to the Administrator (or the State with an approved permit program) before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator. The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h).

(3) *Reporting results of opacity or visible emission observations.* The owner or operator of an affected source required to conduct opacity or visible emission observations by a relevant standard shall report the opacity or visible emission results (produced using Test Method 9 or Test Method 22, or an alternative to these test methods) along with the results of the performance test required under § 63.7. If no performance test is required, or if visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the performance test required under § 63.7, the owner or operator shall report the opacity or visible emission results before the close of business on the 30th day following the completion of the opacity or visible emission observations.

(4) *Progress reports.* The owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under § 63.6(i) shall submit such reports to the Administrator (or the State with an approved permit program) by the dates specified in the written extension of compliance.

(5)(i) *Periodic startup, shutdown, and malfunction reports.* If actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan [see § 63.6(e)(3)], the owner or operator shall state such information in a startup, shutdown, and malfunction report. Reports shall only

be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, that shall be submitted to the Administrator semiannually (or on a more frequent basis if specified otherwise in a relevant standard or as established otherwise by the permitting authority in the source's title V permit). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate). If the owner or operator is required to submit excess emissions and continuous monitoring system performance (or other periodic) reports under this part, the startup, shutdown, and malfunction reports required under this paragraph may be submitted simultaneously with the excess emissions and continuous monitoring system performance (or other) reports. If startup, shutdown, and malfunction reports are submitted with excess emissions and continuous monitoring system performance (or other periodic) reports, and the owner or operator receives approval to reduce the frequency of reporting for the latter under paragraph (e) of this section, the frequency of reporting for the startup, shutdown, and malfunction reports also may be reduced if the Administrator does not object to the intended change. The procedures to implement the allowance in the preceding sentence shall be the same as the procedures specified in paragraph (e)(3) of this section.

(ii) *Immediate startup, shutdown, and malfunction reports.* Notwithstanding the allowance to reduce the frequency of reporting for periodic startup, shutdown, and malfunction reports under paragraph (d)(5)(i) of this section, any time an action taken by an owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall report the actions taken for that event within 2 working

days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The immediate report required under this paragraph shall consist of a telephone call (or facsimile (FAX) transmission) to the Administrator within 2 working days after commencing actions inconsistent with the plan, and it shall be followed by a letter, delivered or postmarked within 7 working days after the end of the event, that contains the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred. Notwithstanding the requirements of the previous sentence, after the effective date of an approved permit program in the State in which an affected source is located, the owner or operator may make alternative reporting arrangements, in advance, with the permitting authority in that State. Procedures governing the arrangement of alternative reporting requirements under this paragraph are specified in § 63.9(i).

(e) *Additional reporting requirements for sources with continuous monitoring systems*—(i) *General*. When more than one CEMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CEMS.

(2) *Reporting results of continuous monitoring system performance evaluations*.

(i) The owner or operator of an affected source required to install a CMS by a relevant standard shall furnish the Administrator a copy of a written report of the results of the CMS performance evaluation, as required under § 63.8(e), simultaneously with the results of the performance test required under § 63.7, unless otherwise specified in the relevant standard.

(ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon re-

quest, three copies of a written report of the results of the COMS performance evaluation conducted under § 63.8(e). The copies shall be furnished at least 15 calendar days before the performance test required under § 63.7 is conducted.

(3) *Excess emissions and continuous monitoring system performance report and summary report*. (i) Excess emissions and parameter monitoring exceedances are defined in relevant standards. The owner or operator of an affected source required to install a CMS by a relevant standard shall submit an excess emissions and continuous monitoring system performance report and/or a summary report to the Administrator semiannually, except when—

(A) More frequent reporting is specifically required by a relevant standard;

(B) The Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source; or

(C) The CMS data are to be used directly for compliance determination and the source experienced excess emissions, in which case quarterly reports shall be submitted. Once a source reports excess emissions, the source shall follow a quarterly reporting format until a request to reduce reporting frequency under paragraph (e)(3)(ii) of this section is approved.

(ii) *Request to reduce frequency of excess emissions and continuous monitoring system performance reports*. Notwithstanding the frequency of reporting requirements specified in paragraph (e)(3)(i) of this section, an owner or operator who is required by a relevant standard to submit excess emissions and continuous monitoring system performance (and summary) reports on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:

(A) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected source's excess emissions and continuous monitoring system performance reports continually demonstrate that the source is in compliance with the relevant standard;

(B) The owner or operator continues to comply with all recordkeeping and

monitoring requirements specified in this subpart and the relevant standard; and

(C) The Administrator does not object to a reduced frequency of reporting for the affected source, as provided in paragraph (e)(3)(iii) of this section.

(iii) The frequency of reporting of excess emissions and continuous monitoring system performance (and summary) reports required to comply with a relevant standard may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the 5-year record-keeping period prior to the intended change, including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation and maintenance requirements. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce the frequency of reporting, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iv) As soon as CMS data indicate that the source is not in compliance with any emission limitation or operating parameter specified in the relevant standard, the frequency of reporting shall revert to the frequency specified in the relevant standard, and the owner or operator shall submit an excess emissions and continuous monitoring system performance (and summary) report for the noncomplying emission points at the next appropriate reporting period following the noncomplying event. After demonstrating ongoing compliance with the relevant standard for another full year, the

owner or operator may again request approval from the Administrator to reduce the frequency of reporting for that standard, as provided for in paragraphs (e)(3)(ii) and (e)(3)(iii) of this section.

(v) *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required, shall be delivered or postmarked by the 30th day following the end of each calendar half or quarter, as appropriate. Written reports of excess emissions or exceedances of process or control system parameters shall include all the information required in paragraphs (c)(5) through (c)(13) of this section, in § 63.8(c)(7) and § 63.8(c)(8), and in the relevant standard, and they shall contain the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances of a parameter have occurred, or a CMS has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.

(vi) *Summary report.* As required under paragraphs (e)(3)(vii) and (e)(3)(viii) of this section, one summary report shall be submitted for the hazardous air pollutants monitored at each affected source (unless the relevant standard specifies that more than one summary report is required, e.g., one summary report for each hazardous air pollutant monitored). The summary report shall be entitled "Summary Report—Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance" and shall contain the following information:

(A) The company name and address of the affected source;

(B) An identification of each hazardous air pollutant monitored at the affected source;

(C) The beginning and ending dates of the reporting period;

(D) A brief description of the process units;

(E) The emission and operating parameter limitations specified in the relevant standard(s);

(F) The monitoring equipment manufacturer(s) and model number(s);

(G) The date of the latest CMS certification or audit;

(H) The total operating time of the affected source during the reporting period;

(I) An emission data summary (or similar summary if the owner or operator monitors control system parameters), including the total duration of excess emissions during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to startup/shutdown, control equipment problems, process problems, other known causes, and other unknown causes;

(J) A CMS performance summary (or similar summary if the owner or operator monitors control system parameters), including the total CMS downtime during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of CMS downtime expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total CMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, nonmonitoring equipment malfunctions, quality assurance/quality control calibrations, other known causes, and other unknown causes;

(K) A description of any changes in CMS, processes, or controls since the last reporting period;

(L) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

(M) The date of the report.

(vii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring

system performance report need not be submitted unless required by the Administrator.

(viii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, both the summary report and the excess emissions and continuous monitoring system performance report shall be submitted.

(4) *Reporting continuous opacity monitoring system data produced during a performance test.* The owner or operator of an affected source required to use a COMS shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results. The report of COMS data shall be submitted simultaneously with the report of the performance test results required in paragraph (d)(2) of this section.

(f) *Waiver of recordkeeping or reporting requirements.* (1) Until a waiver of a recordkeeping or reporting requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

(2) Recordkeeping or reporting requirements may be waived upon written application to the Administrator if, in the Administrator's judgment, the affected source is achieving the relevant standard(s), or the source is operating under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

(3) If an application for a waiver of recordkeeping or reporting is made, the application shall accompany the request for an extension of compliance under § 63.6(i), any required compliance progress report or compliance status report required under this part (such as under § 63.6(i) and § 63.9(h)) or in the source's title V permit, or an excess emissions and continuous monitoring system performance report required under paragraph (e) of this section,

whichever is applicable. The application shall include whatever information the owner or operator considers useful to convince the Administrator that a waiver of recordkeeping or reporting is warranted.

(4) The Administrator will approve or deny a request for a waiver of recordkeeping or reporting requirements under this paragraph when he/she—

(i) Approves or denies an extension of compliance; or

(ii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or

(iii) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.

(5) A waiver of any recordkeeping or reporting requirement granted under this paragraph may be conditioned on other recordkeeping or reporting requirements deemed necessary by the Administrator.

(6) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

§ 63.11 Control device requirements.

(a) *Applicability.* This section contains requirements for control devices used to comply with provisions in relevant standards. These requirements apply only to affected sources covered by relevant standards referring directly or indirectly to this section.

(b) *Flares.* (1) Owners or operators using flares to comply with the provisions of this part shall monitor these control devices to assure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators using flares shall monitor these control devices.

(2) Flares shall be steam-assisted, air-assisted, or non-assisted.

(3) Flares shall be operated at all times when emissions may be vented to them.

(4) Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22.

(5) Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(6) An owner/operator has the choice of adhering to the heat content specifications in paragraph (b)(6)(ii) of this section, and the maximum tip velocity specifications in paragraph (b)(7) or (b)(8) of this section, or adhering to the requirements in paragraph (b)(6)(i) of this section.

(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity V_{\max} , as determined by the following equation:

$$V_{\max} = (X_{H_2} - K_1) * K_2$$

Where:

V_{\max} = Maximum permitted velocity, m/sec.

K_1 = Constant, 6.0 volume-percent hydrogen.

K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H_2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in § 63.14).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (b)(7)(i) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at

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7.45 M/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

H_T =Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

K =Constant=

$$1.740 \times 10^{-7} \left(\frac{1}{\text{ppmv}} \right) \left(\frac{\text{g-mole}}{\text{scm}} \right) \left(\frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

C_i =Concentration of sample component i in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 (incorporated by reference as specified in §63.14).

H_i =Net heat of combustion of sample component i , kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in §63.14) if published values are not available or cannot be calculated.

n =Number of sample components.

(7)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(7)(ii) and (b)(7)(iii) of this section. The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), as determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60 of this chapter, as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, less than the velocity V_{\max} , as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity, V_{\max} , for flares complying with this paragraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{\max}) = (H_T + 28.8) / 31.7$$

Where:

V_{\max} =Maximum permitted velocity, m/sec.

28.8=Constant.

31.7=Constant.

H_T =The net heating value as determined in paragraph (b)(6) of this section.

(8) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity V_{\max} . The maximum permitted velocity, V_{\max} , for air-assisted flares shall be determined by the following equation:

$$V_{\max} = 8.71 + 0.708(H_T)$$

Where:

V_{\max} =Maximum permitted velocity, m/sec.

8.71=Constant.

0.708=Constant.

H_T =The net heating value as determined in paragraph (b)(6)(ii) of this section.

[59 FR 12430, Mar. 16, 1994, as amended at 63 FR 24444, May 4, 1998]

§63.12 State authority and delegations.

(a) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from—

(1) Adopting and enforcing any standard, limitation, prohibition, or other regulation applicable to an affected

source subject to the requirements of this part, provided that such standard, limitation, prohibition, or regulation is not less stringent than any requirement applicable to such source established under this part;

(2) Requiring the owner or operator of an affected source to obtain permits, licenses, or approvals prior to initiating construction, reconstruction, modification, or operation of such source; or

(3) Requiring emission reductions in excess of those specified in subpart D of this part as a condition for granting the extension of compliance authorized by section 112(i)(5) of the Act.

(b)(1) Section 112(l) of the Act directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards and other requirements pursuant to section 112 for stationary sources located in that State. Because of the unique nature of radioactive material, delegation of authority to implement and enforce standards that control radionuclides may require separate approval.

(2) Subpart E of this part establishes procedures consistent with section 112(l) for the approval of State rules or programs to implement and enforce applicable Federal rules promulgated under the authority of section 112. Subpart E also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities granted through a section 112(l) approval.

(c) All information required to be submitted to the EPA under this part also shall be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act, provided that each specific delegation may exempt sources from a certain Federal or State reporting requirement. The Administrator may permit all or some of the information to be submitted to the appropriate State agency only, instead of to the EPA and the State agency.

§ 63.13 Addresses of State air pollution control agencies and EPA Regional Offices.

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursu-

ant to this part shall be submitted to the appropriate Regional Office of the U.S. Environmental Protection Agency indicated in the following list of EPA Regional Offices.

EPA Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), Director, Air, Pesticides and Toxics Division, J.F.K. Federal Building, Boston, MA 02203-2211.

EPA Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, 26 Federal Plaza, New York, NY 10278.

EPA Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air, Radiation and Toxics Division, 841 Chestnut Street, Philadelphia, PA 19107.

EPA Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air, Pesticides and Toxics, Management Division, 345 Courtland Street, NE., Atlanta, GA 30365.

EPA Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, 77 West Jackson Blvd., Chicago, IL 60604-3507.

EPA Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas), Director, Air, Pesticides and Toxics, 1445 Ross Avenue, Dallas, TX 75202-2733.

EPA Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Toxics Division, 726 Minnesota Avenue, Kansas City, KS 66101.

EPA Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Director, Air and Toxics Division, 999 18th Street, 1 Denver Place, Suite 500, Denver, CO 80202-2405.

EPA Region IX (Arizona, California, Hawaii, Nevada, American Samoa, Guam), Director, Air and Toxics Division, 75 Hawthorne Street, San Francisco, CA 94105.

EPA Region X (Alaska, Idaho, Oregon, Washington), Director, Air and Toxics Division, 1200 Sixth Avenue, Seattle, WA 98101.

(b) All information required to be submitted to the Administrator under this part also shall be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act. The owner or operator of an affected source may contact the appropriate EPA Regional Office for the mailing addresses for those States whose delegation requests have been approved.

(c) If any State requires a submittal that contains all the information required in an application, notification, request, report, statement, or other communication required in this part,

an owner or operator may send the appropriate Regional Office of the EPA a copy of that submittal to satisfy the requirements of this part for that communication.

§ 63.14 Incorporations by reference.

(a) The materials listed in this section are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding addresses noted below, and all are available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC, at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M Street, SW., Washington, DC, and at the EPA Library (MD-35), U.S. EPA, Research Triangle Park, North Carolina.

(b) The materials listed below are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

(1) ASTM D1946-77, Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for § 63.11(b)(6).

(2) ASTM D2382-76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b)(6).

(3) ASTM D2879-83, Standard Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for § 63.111 of subpart G of this part.

(4) ASTM D 3695-88, Standard Test Method for Volatile Alcohols in Water by Direct Aqueous-Injection Gas Chromatography, IBR approved for § 63.365(e)(1) of subpart O of this part.

(5) ASTM D 1193-77, Standard Specification for Reagent Water, IBR ap-

proved for Method 306, section 4.1.1 and section 4.4.2, of appendix A to part 63.

(6) ASTM D 1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents, IBR approved for Method 306B, section 2.2, section 3.1, and section 4.2, of appendix A to part 63.

(7) ASTM E 260-91, Standard Practice for Packed Column Gas Chromatography, IBR approved for § 63.750(b)(2) of subpart GG of this part.

(8) ASTM D523-89, Standard Test Method for Specular Gloss, IBR approved for § 63.782.

(9) ASTM D1475-90, Standard Test Method for Density of Paint, Varnish, Lacquer, and Related Products, IBR approved for § 63.788 appendix A.

(10) ASTM D2369-93, Standard Test Method for Volatile Content of Coatings, IBR approved for § 63.788 appendix A.

(11) ASTM D3912-80, Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(12) ASTM D4017-90, Standard Test Method for Water and Paints and Paint Materials by Karl Fischer Method, IBR approved for § 63.788 appendix A.

(13) ASTM D4082-89, Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(14) ASTM D4256-89 [reapproved 1994], Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.

(15) ASTM D3792-91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for § 63.788 appendix A.

(16) ASTM D3257-93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).

(17) ASTM E260-91, Standard Practice for Packed Column Gas Chromatography, IBR approved for § 63.786(b).

(18) ASTM E180-93, Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals, IBR approved for § 63.786(b).

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(c) The materials listed below are available for purchase from the American Petroleum Institute (API), 1220 L Street, NW., Washington, DC 20005.

(1) API Publication 2517, *Evaporative Loss from External Floating-Roof Tanks*, Third Edition, February 1989, IBR approved for § 63.111 of subpart G of this part.

(2) API Publication 2518, *Evaporative Loss from Fixed-roof Tanks*, Second Edition, October 1991, IBR approved for § 63.150(g)(3)(i)(C) of subpart G of this part.

(d) *State and Local Requirements*. The materials listed below are available at the Air and Radiation Docket and Information Center, U.S. EPA, 401 M Street, SW., Washington, DC.

(1) *California Regulatory Requirements Applicable to the Air Toxics Program*, April 6, 1998, IBR approved for § 63.99(a)(5)(ii) of subpart E of this part.

(2) [Reserved]

[59 FR 12430, Mar. 16, 1994, as amended at 59 FR 19453, Apr. 22, 1994; 59 FR 62589, Dec. 6, 1994; 60 FR 4963, Jan. 25, 1995; 60 FR 33122, June 27, 1995; 60 FR 45980, Sept. 1, 1995; 61 FR 25399, May 21, 1996; 61 FR 66227, Dec. 17, 1996; 62 FR 65024, Dec. 10, 1997; 63 FR 26465, May 13, 1998]

EFFECTIVE DATE NOTE: At 63 FR 26465, May 13, 1998, § 63.14, paragraph (d)(1) was revised, effective July 13, 1998. For the convenience of the user, the superseded text is set forth as follows:

§ 63.14 Incorporation by reference.

* * * * *

(d) * * *

(1) *California Regulatory Requirements Applicable to the Air Toxics Program*, August 1, 1997, IBR approved for § 63.99(a)(5)(ii) of subpart E of this part.

§ 63.15 Availability of information and confidentiality.

(a) *Availability of information*. (1) With the exception of information protected through part 2 of this chapter, all reports, records, and other information collected by the Administrator under this part are available to the public. In addition, a copy of each permit application, compliance plan (including the schedule of compliance), notification of compliance status, excess emissions and continuous monitoring systems performance report, and title V permit

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is available to the public, consistent with protections recognized in section 503(e) of the Act.

(2) The availability to the public of information provided to or otherwise obtained by the Administrator under this part shall be governed by part 2 of this chapter.

(b) *Confidentiality*. (1) If an owner or operator is required to submit information entitled to protection from disclosure under section 114(c) of the Act, the owner or operator may submit such information separately. The requirements of section 114(c) shall apply to such information.

(2) The contents of a title V permit shall not be entitled to protection under section 114(c) of the Act; however, information submitted as part of an application for a title V permit may be entitled to protection from disclosure.

Subpart B—Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)

SOURCE: 59 FR 26449, May 20, 1994, unless otherwise noted.

§ 63.40 Applicability of §§ 63.40 through 63.44.

(a) *Applicability*. The requirements of §§ 63.40 through 63.44 of this subpart carry out section 112(g)(2)(B) of the 1990 Amendments.

(b) *Overall requirements*. The requirements of §§ 63.40 through 63.44 of this subpart apply to any owner or operator who constructs or reconstructs a major source of hazardous air pollutants after the effective date of section 112(g)(2)(B) (as defined in § 63.41) and the effective date of a title V permit program in the State or local jurisdiction in which the major source is (or would be) located unless the major source in question has been specifically regulated or exempted from regulation under a standard issued pursuant to section 112(d), section 112(h), or section 112(j) and incorporated in another subpart of part 63, or the owner or operator of such major source has received all necessary air

quality permits for such construction or reconstruction project before the effective date of section 112(g)(2)(B).

(c) *Exclusion for electric utility steam generating units.* The requirements of this subpart do not apply to electric utility steam generating units unless and until such time as these units are added to the source category list pursuant to section 112(c)(5) of the Act.

(d) *Relationship to State and local requirements.* Nothing in this subpart shall prevent a State or local agency from imposing more stringent requirements than those contained in this subpart.

(e) *Exclusion for stationary sources in deleted source categories.* The requirements of this subpart do not apply to stationary sources that are within a source category that has been deleted from the source category list pursuant to section 112(c)(9) of the Act.

(f) *Exclusion for research and development activities.* The requirements of this subpart do not apply to research and development activities, as defined in § 63.41.

[61 FR 68399, Dec. 27, 1996]

§ 63.41 Definitions.

Terms used in this subpart that are not defined in this section have the meaning given to them in the Act and in subpart A.

Affected source means the stationary source or group of stationary sources which, when fabricated (on site), erected, or installed meets the definition of “construct a major source” or the definition of “reconstruct a major source” contained in this section.

Affected States are all States:

(1) Whose air quality may be affected and that are contiguous to the State in which a MACT determination is made in accordance with this subpart; or

(2) Whose air quality may be affected and that are within 50 miles of the major source for which a MACT determination is made in accordance with this subpart.

Available information means, for purposes of identifying control technology options for the affected source, information contained in the following information sources as of the date of approval of the MACT determination by the permitting authority:

(1) A relevant proposed regulation, including all supporting information;

(2) Background information documents for a draft or proposed regulation;

(3) Data and information available for the Control Technology Center developed pursuant to section 113 of the Act;

(4) Data and information contained in the Aerometric Information Retrieval System including information in the MACT data base;

(5) Any additional information that can be expeditiously provided by the Administrator; and

(6) For the purpose of determinations by the permitting authority, any additional information provided by the applicant or others, and any additional information considered available by the permitting authority.

Construct a major source means:

(1) To fabricate, erect, or install at any greenfield site a stationary source or group of stationary sources which is located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP's or 25 tons per year of any combination of HAP, or

(2) To fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, unless the process or production unit satisfies criteria in paragraphs (2) (i) through (vi) of this definition.

(i) All HAP emitted by the process or production unit that would otherwise be controlled under the requirements of this subpart will be controlled by emission control equipment which was previously installed at the same site as the process or production unit;

(ii) (A) The permitting authority has determined within a period of 5 years prior to the fabrication, erection, or installation of the process or production unit that the existing emission control equipment represented best available control technology (BACT), lowest achievable emission rate (LAER) under 40 CFR part 51 or 52, toxics—best available control technology (T-BACT), or MACT based on State air toxic rules

for the category of pollutants which includes those HAP's to be emitted by the process or production unit; or

(B) The permitting authority determines that the control of HAP emissions provided by the existing equipment will be equivalent to that level of control currently achieved by other well-controlled similar sources (i.e., equivalent to the level of control that would be provided by a current BACT, LAER, T-BACT, or State air toxic rule MACT determination);

(iii) The permitting authority determines that the percent control efficiency for emissions of HAP from all sources to be controlled by the existing control equipment will be equivalent to the percent control efficiency provided by the control equipment prior to the inclusion of the new process or production unit;

(iv) The permitting authority has provided notice and an opportunity for public comment concerning its determination that criteria in paragraphs (2)(i), (2)(ii), and (2)(iii) of this definition apply and concerning the continued adequacy of any prior LAER, BATC, T-BACT, or State air toxic rule MACT determination;

(v) If any commenter has asserted that a prior LAER, BACT, T-BACT, or State air toxic rule MACT determination is no longer adequate, the permitting authority has determined that the level of control required by that prior determination remains adequate; and

(vi) Any emission limitations, work practice requirements, or other terms and conditions upon which the above determinations by the permitting authority are applicable requirements under section 504(a) and either have been incorporated into any existing title V permit for the affected facility or will be incorporated into such permit upon issuance.

Control technology means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants through process changes, substitution of materials or other modifications;

(1) Reduce the quantity of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications;

(2) Enclose systems or processes to eliminate emissions;

(3) Collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(4) Are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(5) Are a combination of paragraphs (1) through (4) of this definition.

Effective date of section 112(g)(2)(B) in a State or local jurisdiction means the effective date specified by the permitting authority at the time the permitting authority adopts a program to implement section 112(g) with respect to construction or reconstruction or major sources of HAP, or June 29, 1998 whichever is earlier.

Electric utility steam generating unit means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that co-generates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electric output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

Greenfield suite means a contiguous area under common control that is an undeveloped site.

List of Source Categories means the Source Category List required by section 112(c) of the Act.

Maximum achievable control technology (MACT) emission limitation for new sources means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of deduction in emissions that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by the constructed or reconstructed major source.

Notice of MACT Approval means a document issued by a permitting authority containing all federally enforceable

conditions necessary to enforce the application and operation of MACT or other control technologies such that the MACT emission limitation is met.

Permitting authority means the permitting authority as defined in part 70 or 71 of this chapter.

Process or production unit means any collection of structures and/or equipment, that processes assemblies, applies, or otherwise uses material inputs to produce or store an intermediate or final product. A single facility may contain more than one process or production unit.

Reconstruct a major source means the replacement of components at an existing process or production unit that in and of itself emits or has that potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

(2) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this subpart.

Research and development activities means activities conducted at a research or laboratory facility whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a *de minimis* manner.

Similar source means a stationary source or process that has comparable emissions and is structurally similar in design and capacity to a constructed or reconstructed major source such that the source could be controlled using the same control technology.

[61 FR 68399, Dec. 27, 1996]

§ 63.42 Program requirements governing construction or reconstruction of major sources.

(a) *Adoption of program.* Each permitting authority shall review its existing

programs, procedures, and criteria for preconstruction review for conformity to the requirements established by §§ 63.40 through 63.44, shall make any additions and revisions to its existing programs, procedures, and criteria that the permitting authority deems necessary to properly effectuate §§ 63.40 through 63.44, and shall adopt a program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP. As part of the adoption by the permitting authority of a program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP, the chief executive officer of the permitting authority shall certify that the program satisfies all applicable requirements established by §§ 63.40 through 63.44, and shall specify an effective date for that program which is not later than June 29, 1998. Prior to the specified effective date, the permitting authority shall publish a notice stating that the permitting authority has adopted a program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP and stating the effective date, and shall provide a written description of the program to the Administrator through the appropriate EPA Regional Office. Nothing in this section shall be construed either:

(1) To require that any owner or operator of a stationary source comply with any requirement adopted by the permitting authority which is not intended to implement section 112(g) with respect to construction or reconstruction of major sources of HAP; or

(2) To preclude the permitting authority from enforcing any requirements not intended to implement section 112(g) with respect to construction or reconstruction of major sources of HAP under any other provision of applicable law.

(b) *Failure to adopt program.* In the event that the permitting authority fails to adopt a program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP with an effective date on or before June 29, 1998, and the permitting authority concludes that it is able to make case-by-case MACT determinations which conform to the provisions

of § 63.43 in the absence of such a program, the permitting authority may elect to make such determinations. However, in those instances where the permitting authority elects to make case-by-case MACT determinations in the absence of a program to implement section 112(g) with respects to construction or reconstruction of major sources of HAP, no such case-by-case MACT determinations shall take effect until after it has been submitted by the permitting authority in writing to the appropriate EPA Regional Office and the EPA Regional Office has concurred in writing that the case-by-case MACT determination by the permitting authority is in conformity with all requirements established by §§ 63.40 through 63.44. In the event that the permitting authority fails to adopt a program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP with an effective date on or before June 29, 1998, and the permitting authority concludes that it is unable to make case-by-case MACT determinations in the absence of such a program, the permitting authority may request that the EPA Regional Office adopt and implement a transitional program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP in the affected State of local jurisdiction while the permitting authority completes development and adoption of a section 112(g) program. Any such transitional section 112(g) program adopted by the EPA Regional Office shall conform to all requirements established by §§ 63.40 through 63.44, and shall remain in effect for no more than 1 year. Continued failure by the permitting authority to adopt a program to implement section 112(g) with respect to construction or reconstruction of major sources of HAP shall be construed as a failure by the permitting authority to adequately administer and enforce its title V permitting program and shall constitute cause by EPA to apply the sanctions and remedies set forth in the Clean Air Act section 502(I).

(c) *Prohibition.* After the effective date of section 112(g)(2)(B) (as defined in § 63.41) in a State or local jurisdiction and the effective date of the title

V permit program applicable to that State or local jurisdiction, no person may begin actual construction or reconstruction of a major source of HAP in such State or local jurisdiction unless:

(1) The major source in question has been specifically regulated or exempted from regulation under a standard issued pursuant to section 112(d), section 112(h) or section 112(j) in part 63, and the owner and operator has fully complied with all procedures and requirements for preconstruction review established by that standard, including any applicable requirements set forth in subpart A of this part 63; or

(2) The permitting authority has made a final and effective case-by-case determination pursuant to the provisions of § 63.43 such that emissions from the constructed or reconstructed major source will be controlled to a level no less stringent than the maximum achievable control technology emission limitation for new sources.

[61 FR 68400, Dec. 27, 1996]

§ 63.43 Maximum achievable control technology (MACT) determinations for constructed and reconstructed major sources.

(a) *Applicability.* The requirements of this section apply to an owner or operator who constructs or reconstructs a major source of HAP subject to a case-by-case determination of maximum achievable control technology pursuant to § 63.42(c).

(b) *Requirements for constructed and reconstructed major sources.* When a case-by-case determination of MACT is required by § 63.42(c), the owner and operator shall obtain from the permitting authority an approved MACT determination according to one of the review options contained in paragraph (c) of this section.

(c) *Review options.* (1) When the permitting authority requires the owner or operator to obtain, or revise, a permit issued pursuant to title V of the Act before construction or reconstruction of the major source, or when the permitting authority allows the owner or operator at its discretion to obtain or revise such a permit before construction or reconstruction, and the owner or operator elects that option,

the owner or operator shall follow the administrative procedures in the program approved under title V of the Act (or in other regulations issued pursuant to title V of the Act, where applicable).

(2) When an owner or operator is not required to obtain or revise a title V permit (or other permit issued pursuant to title V of the Act) before construction or reconstruction, the owner or operator (unless the owner or operator voluntarily follows the process to obtain a title V permit) shall either, at the discretion of the permitting authority:

(i) Apply for and obtain a Notice of MACT Approval according to the procedures outlined in paragraphs (f) through (h) of this section; or

(ii) Apply for a MACT determination under any other administrative procedures for preconstruction review and approval established by the permitting authority for a State or local jurisdiction which provide for public participation in the determination, and ensure that no person may begin actual construction or reconstruction of a major source in that State or local jurisdiction unless the permitting authority determines that the MACT emission limitation for new sources will be met.

(3) When applying for a permit pursuant to title V of the Act, an owner or operator may request approval of case-by-case MACT determinations for alternative operating scenarios. Approval of such determinations satisfies the requirements of section 112(g) of each such scenario.

(4) Regardless of the review process, the MACT emission limitation and requirements established shall be effective as required by paragraph (j) of this section, consistent with the principles established in paragraph (d) of this section, and supported by the information listed in paragraph (e) of this section. The owner or operator shall comply with the requirements in paragraphs (k) and (l) of this section, and with all applicable requirements in subpart A of this part.

(d) *Principles of MACT determinations.* The following general principles shall govern preparation by the owner or operator of each permit application or other application requiring a case-by-

case MACT determination concerning construction or reconstruction of a major source, and all subsequent review of and actions taken concerning such an application by the permitting authority:

(1) The MACT emission limitation or MACT requirements recommended by the applicant and approved by the permitting authority shall not be less stringent than the emission control which is achieved in practice by the best controlled similar source, as determined by the permitting authority.

(2) Based upon available information, as defined in this subpart, the MACT emission limitation and control technology (including any requirements under paragraph (d)(3) of this section) recommended by the applicant and approved by the permitting authority shall achieve the maximum degree of reduction in emissions of HAP which can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.

(3) The applicant may recommend a specific design, equipment, work practice, or operational standard, or a combination thereof, and the permitting authority may approve such a standard if the permitting authority specifically determines that it is not feasible to prescribe or enforce an emission limitation under the criteria set forth in section 112(h)(2) of the Act.

(4) If the Administrator has either proposed a relevant emission standard pursuant to section 112(d) or section 112(h) of the Act or adopted a presumptive MACT determination for the source category which includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination.

(e) *Application requirements for a case-by-case MACT determination.* (1) An application for a MACT determination

(whether a permit application under title V of the Act, an application for a Notice of MACT Approval, or other document specified by the permitting authority under paragraph (c)(2)(ii) of this section) shall specify a control technology selected by the owner or operator that, if properly operated and maintained, will meet the MACT emission limitation or standard as determined according to the principles set forth in paragraph (d) of this section.

(2) In each instance where a constructed or reconstructed major source would require additional control technology or a change in control technology, the application for a MACT determination shall contain the following information:

(i) The name and address (physical location) of the major source to be constructed or reconstructed;

(ii) A brief description of the major source to be constructed or reconstructed and identification of any listed source category or categories in which it is included;

(iii) The expected commencement date for the construction or reconstruction of the major source;

(iv) The expected completion date for construction or reconstruction of the major source;

(v) the anticipated date of start-up for the constructed or reconstructed major source;

(vi) The HAP emitted by the constructed or reconstructed major source, and the estimated emission rate for each such HAP, to the extent this information is needed by the permitting authority to determine MACT;

(vii) Any federally enforceable emission limitations applicable to the constructed or reconstructed major source;

(viii) The maximum and expected utilization of capacity of the constructed or reconstructed major source, and the associated uncontrolled emission rates for that source, to the extent this information is needed by the permitting authority to determine MACT;

(ix) The controlled emissions for the constructed or reconstructed major source in tons/yr at expected and maximum utilization of capacity, to the extent this information is needed by the

permitting authority to determine MACT;

(x) A recommended emission limitation for the constructed or reconstructed major source consistent with the principles set forth in paragraph (d) of this section;

(xi) The selected control technology to meet the recommended MACT emission limitation, including technical information on the design, operation, size, estimated control efficiency of the control technology (and the manufacturer's name, address, telephone number, and relevant specifications and drawings, if requested by the permitting authority);

(xii) Supporting documentation including identification of alternative control technologies considered by the applicant to meet the emission limitation, and analysis of cost and non-air quality health environmental impacts or energy requirements for the selected control technology; and

(xiii) Any other relevant information required pursuant to subpart A.

(3) In each instance where the owner or operator contends that a constructed or reconstructed major source will be in compliance, upon startup, with case-by-case MACT under this subpart without a change in control technology, the application for a MACT determination shall contain the following information:

(i) The information described in paragraphs (e)(2)(i) through (e)(2)(x) of this section; and

(ii) Documentation of the control technology in place.

(f) *Administrative procedures for review of the Notice of MACT Approval.* (1) The permitting authority will notify the owner or operator in writing, within 45 days from the date the application is first received, as to whether the application for a MACT determination is complete or whether additional information is required.

(2) The permitting authority will initially approve the recommended MACT emission limitation and other terms set forth in the application, or the permitting authority will notify the owner or operator in writing of its intent to disapprove the application, within 30 calendar days after the owner

or operator is notified in writing that the application is complete.

(3) The owner or operator may present, in writing, within 60 calendar days after receipt of notice of the permitting authority's intent to disapprove the application, additional information or arguments pertaining to, or amendments to, the application for consideration by the permitting authority before it decides whether to finally disapprove the application.

(4) The permitting authority will either initially approve or issue a final disapproval of the application within 90 days after it notifies the owner or operator of an intent to disapprove or within 30 days after the date additional information is received from the owner or operator; whichever is earlier.

(5) A final determination by the permitting authority to disapprove any application will be in writing and will specify the grounds on which the disapproval is based. If any application is finally disapproved, the owner or operator may submit a subsequent application concerning construction or reconstruction of the same major source, provided that the subsequent application has been amended in response to the stated grounds for the prior disapproval.

(6) An initial decision to approve an application for a MACT determination will be set forth in the Notice of MACT Approval as described in paragraph (g) of this section.

(g) *Notice of MACT Approval.* (1) The Notice of MACT Approval will contain a MACT emission limitation (or a MACT work practice standard if the permitting authority determines it is not feasible to prescribe or enforce an emission standard) to control the emissions of HAP. The MACT emission limitation or standard will be determined by the permitting authority and will conform to the principles set forth in paragraph (d) of this section.

(2) The Notice of MACT Approval will specify any notification, operation and maintenance, performance testing, monitoring, reporting and record keeping requirements. The Notice of MACT Approval shall include:

(i) In addition to the MACT emission limitation or MACT work practice standard established under this sub-

part, additional emission limits, production limits, operational limits or other terms and conditions necessary to ensure Federal enforceability of the MACT emission limitation;

(ii) Compliance certifications, testing, monitoring, reporting and record keeping requirements that are consistent with the requirements of § 70.6(c) of this chapter;

(iii) In accordance with section 114(a)(3) of the Act, monitoring shall be capable of demonstrating continuous compliance during the applicable reporting period. Such monitoring data shall be of sufficient quality to be used as a basis for enforcing all applicable requirements established under this subpart, including emission limitations;

(iv) A statement requiring the owner or operator to comply with all applicable requirements contained in subpart A of this part;

(3) All provisions contained in the Notice of MACT Approval shall be federally enforceable upon the effective date of issuance of such notice, as provided by paragraph (j) of this section.

(4) The Notice of MACT Approval shall expire if construction or reconstruction has not commenced within 18 months of issuance, unless the permitting authority has granted an extension which shall not exceed an additional 12 months.

(h) *Opportunity for public comment on the Notice of MACT Approval.* (1) The permitting authority will provide opportunity for public comment on the Notice of MACT Approval, including, at a minimum:

(i) Availability for public inspection in at least one location in the area affected of the information submitted by the owner or operator and of the permitting authority's initial decision to approve the application;

(ii) A 30-day period for submittal of public comment; and

(iii) A notice by prominent advertisement in the area affected of the location of the source information and initial decision specified in paragraph (h)(1)(i) of this section.

(2) At the discretion of the permitting authority, the Notice of MACT

Approval setting forth the initial decision to approve the application may become final automatically at the end of the comment period if no adverse comments are received. If adverse comments are received, the permitting authority shall have 30 days after the end of the comment period to make any necessary revisions in its analysis and decide whether to finally approve the application.

(i) *EPA notification.* The permitting authority shall send a copy of the final Notice of MACT Approval, notice of approval of a title V permit application incorporating a MACT determination (in those instances where the owner or operator either is required or elects to obtain such a permit before construction or reconstruction), or other notice of approval issued pursuant to paragraph (c)(2)(ii) of this section to the Administrator through the appropriate Regional Office, and to all other State and local air pollution control agencies having jurisdiction in affected States.

(j) *Effective date.* The effective date of a MACT determination shall be the date the Notice of MACT Approval becomes final, the date of issuance of a title V permit incorporating a MACT determination (in those instances where the owner or operator either is required or elects to obtain such a permit before construction or reconstruction), or the date any other notice of approval issued pursuant to paragraph (c)(2)(ii) of this section becomes final.

(k) *Compliance date.* On and after the date of start-up, a constructed or reconstructed major source which is subject to the requirements of this subpart shall be in compliance with all applicable requirements specified in the MACT determination.

(l) *Compliance with MACT determinations.* (1) An owner or operator of a constructed or reconstructed major source that is subject to a MACT determination shall comply with all requirements in the final Notice of MACT Approval, the title V permit (in those instances where the owner or operator either is required or elects to obtain such a permit before construction or reconstruction), or any other final notice of approval issued pursuant to paragraph (c)(2)(ii) of this section, including but not limited to any MACT emission lim-

itation or MACT work practice standard, and any notification, operation and maintenance, performance testing, monitoring, reporting, and record-keeping requirements.

(2) An owner or operator of a constructed or reconstructed major source which has obtained a MACT determination shall be deemed to be in compliance with section 112(g)(2)(B) of the Act only to the extent that the constructed or reconstructed major source is in compliance with all requirements set forth in the final Notice of MACT Approval, the title V permit (in those instances where the owner or operator either is required or elects to obtain such a permit before construction or reconstruction), or any other final notice of approval issued pursuant to paragraph (c)(2)(ii) of this section. Any violation of such requirements by the owner or operator shall be deemed by the permitting authority and by EPA to be a violation of the prohibition on construction or reconstruction in section 112(g)(2)(B) for whatever period the owner or operator is determined to be in violation of such requirements, and shall subject the owner or operator to appropriate enforcement action under the Act.

(m) *Reporting to the Administrator.* Within 60 days of the issuance of a final Notice of MACT Approval, a title V permit incorporating a MACT determination (in those instances where the owner or operator either is required or elects to obtain such a permit before construction or reconstruction), or any other final notice of approval issued pursuant to paragraph (c)(2)(ii) of this section, the permitting authority shall provide a copy of such notice to the Administrator, and shall provide a summary in a compatible electronic format for inclusion in the MACT data base.

[20 FR 68401, Dec. 27, 1996]

§63.44 Requirements for constructed or reconstructed major sources subject to a subsequently promulgated MACT standard or MACT requirement.

(a) If the Administrator promulgates an emission standard under section 112(d) or section 112(h) of the Act or the

permitting authority issues a determination under section 112(j) of the Act that is applicable to a stationary source or group of sources which would be deemed to be a constructed or reconstructed major source under this subpart before the date that the owner or operator has obtained a final and legally effective MACT determination under any of the review options available pursuant to §63.43, the owner or operator of the source(s) shall comply with the promulgated standard or determination rather than any MACT determination under section 112(g) by the permitting authority, and the owner or operator shall comply with the promulgated standard by the compliance date in the promulgated standard.

(b) If the Administrator promulgates an emission standard under section 112(d) or section 112(h) of the Act or the permitting authority makes a determination under section 112(j) of the Act that is applicable to a stationary source or group of sources which was deemed to be a constructed or reconstructed major source under this subpart and has been subject to a prior case-by-case MACT determination pursuant to §63.43, and the owner and operator obtained a final and legally effective case-by-case MACT determination prior to the promulgation date of such emission standard, then the permitting authority shall (if the initial title V permit has not yet been issued) issue an initial operating permit which incorporates the emission standard or determination, or shall (if the initial title V permit has been issued) revise the operating permit according to the reopening procedures in 40 CFR part 70 or part 71, whichever is relevant, to incorporate the emission standard or determination.

(1) The EPA may include in the emission standard established under section 112(d) or section 112(h) of the Act a specific compliance date for those sources which have obtained a final and legally effective MACT determination under this subpart and which have submitted the information required by §63.43 to the EPA before the close of the public comment period for the standard established under section 112(d) of the Act. Such date shall assure that the owner

or operator shall comply with the promulgated standard as expeditiously as practicable, but not longer than 8 years after such standard is promulgated. In that event, the permitting authority shall incorporate the applicable compliance date in the title V operating permit.

(2) If no compliance date has been established in the promulgated 112(d) or 112(h) standard or section 112(j) determination, for those sources which have obtained a final and legally effective MACT determination under this subpart, then the permitting authority shall establish a compliance date in the permit that assures that the owner or operator shall comply with the promulgated standard or determination as expeditiously as practicable, but not longer than 8 years after such standard is promulgated or a section 112(j) determination is made.

(c) Notwithstanding the requirements of paragraphs (a) and (b) of this section, if the Administrator promulgates an emission standard under section 112(d) or section 112(h) of the Act or the permitting authority issues a determination under section 112(j) of the Act that is applicable to a stationary source or group of sources which was deemed to be a constructed or reconstructed major source under this subpart and which is the subject of a prior case-by-case MACT determination pursuant to §63.43, and the level of control required by the emission standard issued under section 112(d) or section 112(h) or the determination issued under section 112(j) is less stringent than the level of control required by any emission limitation or standard in the prior MACT determination, the permitting authority is not required to incorporate any less stringent terms of the promulgated standard in the title V operating permit applicable to such source(s) and may in its discretion consider any more stringent provisions of the prior MACT determination to be applicable legal requirements when issuing or revising such an operating permit.

[61 FR 68404, Dec. 27, 1996]

§§ 63.45–63.49 [Reserved]

§ 63.50 Applicability.

(a) *General applicability.* The requirements of §§ 63.50 through 63.56 implement section 112(j) of the Clean Air Act (as amended in 1990). The requirements of §§ 63.50 through 63.56 apply in each State beginning on the effective date of an approved title V permit program in such State. These requirements apply to the owner or operator of a major source of hazardous air pollutants which includes one or more stationary sources included in a source category or subcategory for which the Administrator has failed to promulgate an emission standard under this part by the section 112(j) deadline.

(b) *Relationship to State and local requirements.* Nothing in §§ 63.50 through 63.56 shall prevent a State or local regulatory agency from imposing more stringent requirements than those contained in these subsections.

(c) *Retention of State permit program approval.* In order to retain State permit program approval, a State must, by the section 112(j) deadline for a source category, obtain sufficient legal authority to establish equivalent emission limitations, to incorporate those requirements into a title V permit, and to incorporate and enforce other requirements of section 112(j).

§ 63.51 Definitions.

Terms used in §§ 63.50 through 63.56 of this subpart that are not defined below have the meaning given to them in the Act, in subpart A of this part.

Available information means, for purposes of conducting a MACT floor finding and identifying control technology options for emission units subject to the provisions of this subpart, information contained in the following information sources as of the section 112(j) deadline:

- (1) A relevant proposed regulation, including all supporting information;
- (2) Background information documents for a draft or proposed regulation;
- (3) Any regulation, information or guidance collected by the Administrator establishing a MACT floor finding and/or MACT determination;

(4) Data and information available from the Control Technology Center developed pursuant to section 112(l)(3) of the Act, and

(5) Data and information contained in the Aerometric Informational Retrieval System (AIRS) including information in the MACT database, and

(6) Any additional information that can be expeditiously provided by the Administrator, and

(7) Any information provided by applicants in an application for a permit, permit modification, administrative amendment, or Notice of MACT Approval pursuant to the requirements of this subpart.

(8) Any additional relevant information provided by the applicant.

Control technology means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants including, but not limited to, measures which:

(1) Reduce the quantity, or eliminate emissions, of such pollutants through process changes, substitution of materials or other modifications;

(2) Enclose systems or processes to eliminate emissions;

(3) Collect, capture, or treat such pollutants when released from a process, stack, storage or fugitive emissions point;

(4) Are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or

(5) Are a combination of paragraphs (1) through (4) of this definition.

Emission point means any part or activity of a major source that emits or has the potential to emit, under current operational design, any hazardous air pollutant.

Emission unit means any building, structure, facility, or installation. This could include an emission point or collection of emission points, within a major source, which the permitting authority determines is the appropriate entity for making a MACT determination under section 112(j), i.e., any of the following:

(1) An emission point that can be individually controlled.

(2) The smallest grouping of emission points, that, when collected together,

can be commonly controlled by a single control device or work practice.

(3) Any grouping of emission points, that, when collected together, can be commonly controlled by a single control device or work practice.

(4) A grouping of emission points that are functionally related. Equipment is functionally related if the operation or action for which the equipment was specifically designed could not occur without being connected with or without relying on the operation of another piece of equipment.

(5) The entire geographical entity comprising a major source in a source category subject to a MACT determination under section 112(j).

Enhanced review means a review process containing all administrative steps needed to ensure that the terms and conditions resulting from the review process can be incorporated into the title V permit by an administrative amendment.

Equivalent emission limitation means an emission limitation, established under section 112(j) of the Act, which is at least as stringent as the MACT standard that EPA would have promulgated under section 112(d) or section 112(h) of the Act.

Existing major source means a major source, construction or reconstruction of which is commenced before EPA proposed a standard, applicable to the major source, under section 112 (d) or (h), or if no proposal was published, then on or before the section 112(j) deadline.

Maximum achievable control technology (MACT) emission limitation for existing sources means the emission limitation reflecting the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reductions, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by sources in the category or subcategory to which such emission standard applies. This limitation shall not be less stringent than the MACT floor.

Maximum achievable control technology (MACT) emission limitation for new

sources means the emission limitation which is not less stringent than the emission limitation achieved in practice by the best controlled similar source, and which reflects the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable by sources in the category or subcategory to which such emission standard applies.

Maximum Achievable Control Technology (MACT) floor means:

(1) For existing sources:

(i) The average emission limitation achieved by the best performing 12 percent of the existing sources in the United States (for which the Administrator has emissions information), excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined in section 171 of the Act) applicable to the source category and prevailing at the time, in the category or subcategory, for categories and subcategories of stationary sources with 30 or more sources; or

(ii) The average emission limitation achieved by the best performing five sources in the United States (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory, for a category or subcategory of stationary sources with fewer than 30 sources;

(2) For new sources, the emission limitation achieved in practice by the best controlled similar source.

New emission unit means an emission unit for which construction or reconstruction is commenced after the section 112(j) deadline, or after proposal of a relevant standard under section 112(d) or section 112(h) of the Clean Air Act (as amended in 1990), whichever comes first, except that, as provided by

§ 63.52(f)(1), an emission unit, at a major source, for which construction or reconstruction is commenced before the date upon which the area source becomes a major source, shall not be considered a new emission unit if, after the addition of such emission unit, the source is still an area source.

New major source means a major source for which construction or reconstruction is commenced after the section 112(j) deadline, or after proposal of a relevant standard under section 112(d) or section 112(h) of the Clean Air Act (as amended in 1990), whichever comes first.

Permitting authority means the permitting authority as defined in part 70 of this chapter.

Section 112(j) deadline means the date 18 months, after the date by which a relevant standard is scheduled to be promulgated under this part, except for all major sources listed in the source category schedule for which a relevant standard is scheduled to be promulgated by November 15, 1994, the section 112(j) deadline is November 15, 1996.

Similar source means an emission unit that has comparable emissions and is structurally similar in design and capacity to other emission units such that the emission units could be controlled using the same control technology.

Source category schedule for standards means the schedule for promulgating MACT standards issued pursuant to section 112(e) of the Act.

United States means the United States, its possessions and territories.

[59 FR 26449, May 20, 1994, as amended at 61 FR 21372, May 10, 1996]

§ 63.52 Approval process for new and existing emission units.

(a) *Application.* (1) Except as provided in § 63.52(a)(3), if the Administrator fails to promulgate an emission standard under this part on or before an applicable section 112(j) deadline for a source category or subcategory, the owner or operator of an existing major source that includes one or more stationary sources in such category or subcategory, shall submit an application for a title V permit or application for a significant permit modification,

whichever is applicable, by the section 112(j) deadline.

(2) If the Administrator fails to promulgate an emission standard under this part on or before an applicable section 112(j) deadline for a source category or subcategory, the owner or operator of a new emission unit in such source category or subcategory shall submit an application for a title V permit or application for a significant permit modification or administrative amendment, whichever is applicable, in accordance with procedures established under title V.

(3)(i) The owner or operator of an existing major source that already has a title V permit requiring compliance with a limit that would meet the requirements of section 112(j) of the Act, shall submit an application for an administrative permit amendment, by the section 112(j) deadline, in accordance with procedures established under title V.

(ii) The owner or operator of a new emission unit that currently complies with a federally enforceable alternative emission limitation, or has a title V permit that already contains emission limitations substantively meeting the requirements of section 112(j), shall submit an application for an administrative permit amendment confirming compliance with the requirements of section 112(j), in accordance with procedures established under title V, and not later than the date 30 days after the date construction or reconstruction is commenced.

(4) In addition to meeting the requirements of § 63.52(a)(2), the owner or operator of a new emission unit may submit an application for a Notice of MACT Approval before construction, pursuant to § 63.54.

(b) *Permit review.* (1) Permit applications submitted under this paragraph will be reviewed and approved or disapproved according to procedures established under title V, and any other regulations approved under title V in the jurisdiction in which the emission unit is located. In the event that the permitting authority disapproves a permit application submitted under this paragraph or determines that the application is incomplete, the owner or operator shall revise and resubmit the

application to meet the objections of the permitting authority not later than six months after first being notified that the application was disapproved or is incomplete.

(2) If the owner or operator has submitted a timely and complete application for a title V permit, significant permit modification, or administrative amendment required by this paragraph, any failure to have this permit will not be a violation of the requirements of this paragraph, unless the delay in final action is due to the failure of the applicant to submit, in a timely manner, information required or requested to process the application.

(c) *Emission limitation.* The permit or Notice of MACT Approval, whichever is applicable, shall contain an equivalent emission limitation (or limitations) for that category or subcategory determined on a case-by-case basis by the permitting authority, or, if the applicable criteria in subpart D of this part are met, the permit or Notice of MACT Approval may contain an alternative emission limitation. For the purposes of the preceding sentence, early reductions made pursuant to section 112(i)(5)(A) of the Act shall be achieved not later than the date on which the relevant standard should have been promulgated according to the source category schedule for standards.

(1) The permit or Notice will contain an emission standard or emission limitation to control the emissions of hazardous air pollutants. The MACT emission limitation will be determined by the permitting authority and will be based on the degree of emission reductions that can be achieved, if the control technologies or work practices are installed, maintained, and operated properly. Such emission limitation will be established consistent with the principles contained in § 63.55.

(2) The permit or Notice will specify any notification, operation and maintenance, performance testing, monitoring, reporting and recordkeeping requirements. The permit or Notice will include the following information:

(i) In addition to the MACT emission limitation required by paragraph (c)(1) of this section, additional emission limits, production limits, operational limits or other terms and conditions

necessary to ensure federal enforceability of the MACT emission limitation;

(ii) Compliance certifications, testing, monitoring, reporting and recordkeeping requirements that are consistent with requirements established pursuant to title V, § 63.52(e), and, at the discretion of the permitting authority, to subpart A of this part;

(iii) A statement requiring the owner or operator to comply with all requirements contained in subpart A of this part deemed by the permitting authority to be applicable;

(iv) A compliance date(s) by which the owner or operator shall be in compliance with the MACT emission limitation, and all other applicable terms and conditions of the Notice.

(d)(1) *Compliance date.* The owner or operator of an existing major source subject to the requirements of this paragraph shall comply with the emission limitation(s) established in the source's title V permit. In no case will such compliance date exceed 3 years after the issuance of the permit for that source, except where the permitting authority issues a permit that grants an additional year to comply in accordance with section 112(i)(3)(B), or unless otherwise specified in section 112(i), or in subpart D of this part.

(2) The owner or operator of a new emission unit subject to the requirements of this paragraph shall comply with a new source MACT level of control immediately upon issuance of the title V permit for the emission unit.

(e) *Enhanced monitoring.* In accordance with section 114(a)(3) of the Act, monitoring shall be capable of detecting deviations from each applicable emission limitation or other standard with sufficient reliability and timeliness to determine continuous compliance over the applicable reporting period. Such monitoring data may be used as a basis for enforcing emission limitations established under this subpart.

(f) *Area sources that become major sources.* (1) After the effective date of this subpart, the owner or operator of a new or existing area source that increases its emissions of, or its potential to emit, hazardous air pollutants such that the source becomes a major

source that is subject to this subpart shall submit an application for a title V permit or application for a significant permit modification, or administrative amendment, whichever is applicable, by the date that such source becomes a major source.

(i) If an existing area source becomes a major source by the addition of an emission unit or as a result of reconstructing, that added emission unit or reconstructed emission unit shall comply with all requirements of this subpart that affect new emission units, including the compliance date for new emission units established in § 63.52(d).

(ii) If an area source, constructed after the section 112(j) deadline, becomes a major source solely by virtue of a relaxation in any federally enforceable emission limitation, established after the section 112(j) deadline, on the capacity of an emission unit or units to emit a hazardous air pollutant, such as a restriction on hours of operation, then that emission unit or units shall comply with all requirements of this subpart that affect new emission units, on or before the date of such relaxation.

(2) After the effective date of this subpart, if the Administrator establishes a lesser quantity emission rate under section 112(a)(1) of the Act that results in an area source becoming a major source, then the owner or operator of such major source shall submit an application for a title V permit or application for a significant permit modification, or administrative amendment, whichever is applicable, on or before the date 6 months from the date that such source becomes a major source. If an existing area source becomes a major source as a result of the Administrator establishing a lesser quantity emission rate, then any emission unit, at that source, for which construction or reconstruction is commenced before the date upon which the source becomes major shall not be considered a new emission unit.

§ 63.53 Application content for case-by-case MACT determinations.

(a) *MACT Demonstration.* Except as provided by § 63.55(a)(3), an application for a MACT determination shall demonstrate how an emission unit will ob-

tain the degree of emission reduction that the Administrator or the State has determined is at least as stringent as the emission reduction that would have been obtained had the relevant emission standard been promulgated according to the source category schedule for standards for the source category of which the emission unit is a member.

(b) *MACT Application.* The application for a MACT determination shall contain the following information:

(1) The name and address (physical location) of the major source;

(2) A brief description of the major source, its source category or categories, a description of the emission unit(s) requiring a MACT determination pursuant to other requirements in this subpart, and a description of whether the emission unit(s) require new source MACT or existing source MACT based on the definitions established in § 63.51;

(3) For a new emission unit, the expected date of commencement of construction;

(4) For a new emission unit, the expected date of completion of construction;

(5) For a new emission unit, the anticipated date of startup of operation;

(6) The hazardous air pollutants emitted by each emission point, and an estimated emission rate for each hazardous air pollutant.

(7) Any existing federally enforceable emission limitations applicable to the emission point.

(8) The maximum and expected utilization of capacity of each emission point, and the associated uncontrolled emission rates for each emission point;

(9) The controlled emissions for each emission point in tons/year at expected and maximum utilization of capacity, and identification of control technology in place;

(10) Except as provided in § 63.55(a)(3), the MACT floor as specified by the Administrator or the permitting authority.

(11) Except as provided in § 63.55(a)(3), recommended emission limitations for the emission unit(s), and supporting information, consistent with § 63.52(c) and § 63.55(a).

(12) Except as provided in § 63.55(a)(3), a description of the control technologies that will apply to meet the emission limitations including technical information on the design, operation, size, estimated control efficiency, and any other information deemed appropriate by the permitting authority, and identification of the emission points to which the control technologies will be applied;

(13) Except as provided in § 63.55(a)(3), parameters to be monitored and frequency of monitoring to demonstrate continuous compliance with the MACT emission limitation over the applicable reporting period.

(14) Any other information required by the permitting authority including, at the discretion of the permitting authority, information required pursuant to subpart A of this part.

§ 63.54 Preconstruction review procedures for new emission units.

(a) *Review process for new emission units.* (1) If the permitting authority requires an owner or operator to obtain or revise a title V permit before construction of the new emission unit, or when the owner or operator chooses to obtain or revise a title V permit before construction, the owner or operator shall follow the administrative procedures established under title V before construction of the new emission unit.

(2) If an owner or operator is not required to obtain or revise a title V permit before construction of the new emission unit (and has not elected to do so), but the new emission unit is covered by any preconstruction or pre-operation review requirements established pursuant to section 112(g) of the Act, then the owner or operator shall comply with those requirements, in order to ensure that the requirements of section 112(j) and section 112(g) are satisfied. If the new emission unit is not covered by section 112(g), the permitting authority, in its discretion, may issue a Notice of MACT Approval, or the equivalent, in accordance with the procedures set forth in paragraphs (b) through (h) of this section, or an equivalent permit review process, before construction or operation of the new emission unit.

(3) Regardless of the review process, the MACT determination shall be consistent with the principles established in § 63.55. The application for a Notice of MACT Approval or a title V permit, permit modification, or administrative amendment, whichever is applicable, shall include the documentation required by § 63.53.

(b) *Optional administrative procedures for preconstruction or pre-operation review for new emission units.* The permitting authority may provide for an enhanced review of section 112(j) MACT determinations that provides for review procedures and compliance requirements equivalent to those set forth in paragraphs (b) through (h) of this section.

(1) The permitting authority will notify the owner or operator in writing as to whether the application for a MACT determination is complete or whether additional information is required.

(2) The permitting authority will approve an applicant's proposed control technology, or the permitting authority will notify the owner or operator in writing of its intention to disapprove a control technology.

(3) The owner or operator may present in writing, within a time frame specified by the permitting authority, additional information, considerations, or amendments to the application before the permitting authority's issuance of a final disapproval.

(4) The permitting authority will issue a preliminary approval or issue a disapproval of the application, taking into account additional information received from the owner or operator.

(5) A determination to disapprove any application will be in writing and will specify the grounds on which the disapproval is based.

(6) Approval of an applicant's proposed control technology will be set forth in a Notice of MACT Approval (or the equivalent) as described in § 63.52(c).

(c) *Opportunity for public comment on Notice of MACT Approval.* The permitting authority will provide opportunity for public comment on the preliminary Notice of MACT Approval prior to issuance, including, at a minimum,

(1) Availability for public inspection in at least one location in the area affected of the information submitted by the owner or operator and of the permitting authority's tentative determination;

(2) A period for submittal of public comment of at least 30 days; and

(3) A notice by prominent advertisement in the area affected of the location of the source information and analysis specified in § 63.52(c). The form and content of the notice will be substantially equivalent to that found in § 70.7 of this chapter.

(4) An opportunity for a public hearing, if one is requested. The permitting authority will give at least 30 days notice in advance of any hearing.

(d) *Review by the EPA and Affected States.* The permitting authority will send copies of the preliminary notice (in time for comment) and final notice required by paragraph (c) of this section to the Administrator through the appropriate Regional Office, and to all other State and local air pollution control agencies having jurisdiction in the region in which the new source would be located. The permitting authority will provide EPA with a review period for the final notice of at least 45 days, and will not issue a final Notice of MACT approval unless EPA objections are satisfied.

(e) *Effective date.* The effective date for new sources under this subsection shall be the date a Notice of MACT Approval is issued to the owner or operator of a new emission unit.

(f) *Compliance date.* New emission units shall comply with case-by-case MACT upon issuance of a title V permit for the emission unit.

(g) *Compliance with MACT Determinations.* An owner or operator of a major source that is subject to a MACT determination shall comply with notification, operation and maintenance, performance testing, monitoring, reporting, and recordkeeping requirements established under § 63.52(e), under title V, and at the discretion of the permitting authority, under subpart A of this part. The permitting authority will provide the EPA with the opportunity to review compliance requirements for consistency with requirements established pursuant to title V during the

review period under paragraph (d) of this section.

(h) *Equivalency under section 112(l).* If a permitting authority requires preconstruction review for new source MACT determinations under this subpart, such requirement shall not necessitate a determination under subpart E of this part.

§ 63.55 Maximum achievable control technology (MACT) determinations for emission units subject to case-by-case determination of equivalent emission limitations.

(a) *Requirements for emission units subject to case-by-case determination of equivalent emission limitations.* The owner or operator of a major source submitting an application pursuant to § 63.52 or § 63.54 shall include elements specified in § 63.53, taking into consideration the following requirements:

(1) When the Administrator has proposed a relevant emission standard for the source category pursuant to section 112(d) or section 112(h) of the Act, then the control technologies recommended by the owner or operator under § 63.53(b)(12), when applied to the emission points recommended by the applicant for control, shall be capable of achieving all emission limitations and requirements of the proposed standard unless the application contains information adequate to support a contention that:

(i) Different emissions limitations represent the maximum achievable control technology emission limitations for the source category, or

(ii) Requirements different from those proposed by EPA will be effective in ensuring that MACT emissions limitations are achieved.

(2) When the Administrator or the permitting authority has issued guidance or distributed information establishing a MACT floor finding for the source category or subcategory by the section 112(j) deadline, then the recommended MACT emission limitations required by § 63.53(b)(11) must be at least as stringent as the MACT floor, unless the application contains information adequately supporting an amendment to such MACT floor.

(3)(i) When neither the Administrator nor the permitting authority has

issued guidance or distributed information establishing a MACT floor finding and MACT determination for a source category or subcategory by the section 112(j) deadline, then the owner or operator shall submit an application for a permit or application for a Notice of MACT Approval, whichever is applicable, containing the elements required by § 63.53(b) (1) through (9) and (14), by the section 112(j) deadline.

(ii) The owner or operator may recommend a control technology that either achieves a level of control at least as stringent as the emission control that is achieved in practice by the best controlled similar source, or obtains at least the maximum reduction in emissions of hazardous air pollutants that is achievable considering costs, non air quality health and environmental impacts, and energy requirements.

(4) The owner or operator may select a specific design, equipment, work practice, or operational standard, or combination thereof, when it is not feasible to prescribe or enforce an equivalent emission limitation due to the nature of the process or pollutant. It is not feasible to prescribe or enforce a limitation when the Administrator determines that a hazardous air pollutant (HAP) or HAPs cannot be emitted through a conveyance designed and constructed to capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

(b) *Requirements for permitting authorities.* The permitting authority will determine whether the permit application or application for a Notice of MACT Approval is approvable. If approvable, the permitting authority will establish hazardous air pollutant emissions limitations equivalent to the limitation that would apply if an emission standard had been issued in a timely manner under subsection 112 (d) or (h) of the Act. The permitting authority will establish these emissions limitations consistent with the following requirements and principles:

(1) Emission limitations will be established for all emission units within

a source category or subcategory for which the section 112(j) deadline has passed.

(2) Each emission limitation for an existing emission unit will reflect the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emission, where achievable) that the permitting authority, taking into consideration the cost of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements, determines is achievable by emission units in the category or subcategory for which the section 112(j) deadline has passed. This limitation will not be less stringent than the MACT floor, and will be based upon available information and information generated by the permitting authority before or during the application review process, including information provided in public comments.

(3) Each emission limitation for a new emission unit will not be less stringent than the emission limitation achieved in practice by the best controlled similar source, and must reflect the maximum degree of reduction in emissions of hazardous air pollutants (including a prohibition on such emissions, where achievable) that the permitting authority, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable. This limitation will be based at a minimum upon available information and information provided in public comments.

(4) When the Administrator has proposed a relevant emissions standard for the source category pursuant to section 112(d) or section 112(h) of the Act, then the equivalent emission limitation established by the permitting authority shall ensure that all emission limitations and requirements of the proposed standard are achieved, unless the permitting authority determines based on additional information that:

(i) Different emissions limitations represent the maximum achievable control technology emission limitations for the source category; or

(ii) Requirements different from those proposed by EPA will be effective

in ensuring that MACT emissions limitations are achieved.

(5) When the Administrator or the permitting authority has issued guidance or collected information establishing a MACT floor finding for the source category or subcategory, the equivalent emission limitation for an emission unit must be at least as stringent as that MACT floor finding unless, based on additional information, the permitting authority determines that the additional information adequately supports an amendment to the MACT floor. In that case, the equivalent emission limitation must be at least as stringent as the amended MACT floor.

(6) The permitting authority will select a specific design, equipment, work practice, or operational standard, or combination thereof, when it is not feasible to prescribe or enforce an equivalent emission limitation due to the nature of the process or pollutant. It is not feasible to prescribe or enforce a limitation when the Administrator determines that a hazardous air pollutant (HAP) or HAPs cannot be emitted through a conveyance designed and constructed to capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations.

(7) Nothing in this subpart will prevent a State or local permitting authority from establishing an emission limitation more stringent than required by Federal regulations.

(c) *Reporting to National Data Base.* The owner or operator shall submit additional copies of its application for a permit, permit modification, administrative amendment, or Notice of MACT Approval, whichever is applicable, to the EPA by the section 112(j) deadline for existing emission units, or by the date of the application for a permit or

Notice of MACT Approval for new emission units.

§63.56 Requirements for case-by-case determination of equivalent emission limitations after promulgation of a subsequent MACT standard.

(a) If the Administrator promulgates an emission standard that is applicable to one or more emission units within a major source before the date a permit application under this paragraph is approved, the permit shall contain the promulgated standard rather than the emission limitation determined under §63.52, and the owner or operator shall comply with the promulgated standard by the compliance date in the promulgated standard.

(b) If the Administrator promulgates an emission standard under section 112 (d) or (h) of the Act that is applicable to a source after the date a permit is issued pursuant to §63.52 or §63.54, the permitting authority shall revise the permit upon its next renewal to reflect the promulgated standard. The permitting authority will establish a compliance date in the revised permit that assures that the owner or operator shall comply with the promulgated standard within a reasonable time, but not longer than 8 years after such standard is promulgated or 8 years after the date by which the owner or operator was first required to comply with the emission limitation established by permit, whichever is earlier.

(c) Notwithstanding the requirements of paragraph (a) or (b) of this section, if the Administrator promulgates an emission standard that is applicable to a source after the date a permit application is approved under §63.52 or §63.54, the permitting authority is not required to change the emission limitation in the permit to reflect the promulgated standard if the level of control required by the emission limitation in the permit is at least as stringent as that required by the promulgated standard.

Subpart C—List of Hazardous Air Pollutants, Petitions Process, Lesser Quantity Designations, Source Category List**§ 63.60 Deletion of caprolactam from the list of hazardous air pollutants.**

The substance caprolactam (CAS number 105602) is deleted from the list of hazardous air pollutants established by 42 U.S.C. 7412(b)(1).

[61 FR 30823, June 18, 1996]

§§ 63.61–63.69 [Reserved]**Subpart D—Regulations Governing Compliance Extensions for Early Reductions of Hazardous Air Pollutants****§ 63.70 Applicability.**

The provisions of this subpart apply to an owner or operator of an existing source who wishes to obtain a compliance extension from a standard issued under section 112(d) of the Act. The provisions of this subpart also apply to a State or local agency acting pursuant to a permit program approved under title V of the Act. The Administrator will carry out the provisions of this subpart for any State that does not have an approved permit program.

§ 63.71 Definitions.

All terms used in this subpart not defined in this section are given the same meaning as in the Act.

Act means the Clean Air Act as amended.

Actual emissions means the actual rate of emissions of a pollutant, but does not include excess emissions from a malfunction, or startups and shutdowns associated with a malfunction. Actual emissions shall be calculated using the source's actual operating rates, and types of materials processed, stored, or combusted during the selected time period.

Artificially or substantially greater emissions means abnormally high emissions such as could be caused by equipment malfunctions, accidents, unusually high production or operating rates compared to historical rates, or other unusual circumstances.

EPA conditional method means any method of sampling and analyzing for air pollutants that has been validated by the Administrator but that has not been published as an EPA Reference Method.

EPA reference method means any method of sampling and analyzing for an air pollutant as described in appendix A of part 60 of this chapter, appendix B of part 61 of this chapter, or appendix A of part 63.

Equipment leaks means leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, agitators, accumulator vessels, and instrumentation systems in hazardous air pollutant service.

Existing source means any source as defined in § 63.72, the construction or reconstruction of which commenced prior to proposal of an applicable section 112(d) standard.

Hazardous air pollutant (HAP) means any air pollutant listed pursuant to section 112(b) of the Act.

High-risk pollutant means a hazardous air pollutant listed in Table 1 of § 63.74.

Malfunction means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

Not feasible to prescribe or enforce a numerical emission limitation means a situation in which the Administrator or a State determines that a pollutant (or stream of pollutants) listed pursuant to section 112(b) of the Act cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal law; or the application of measurement technology to a particular source is not practicable due to technological or economic limitations.

Permitting authority means either a State agency with an approved permitting program under Title V of the Act or the Administrator in cases where

the State does not have an approved permitting program.

Post-reduction year means the one year period beginning with the date early reductions have to be achieved to qualify for a compliance extension under subpart D of this part, unless a source has established with the permitting authority an earlier one year period as the post-reduction year. For most sources, the post-reduction year would begin with the date of proposal of the first section 112(d) standard applicable to the early reductions source; however, for sources that have made enforceable commitments, it would be the year from January 1, 1994, through December 31, 1994.

Responsible official means one of the following:

(1) For a corporation, a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the permitting authority.

(2) For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

(3) For a municipality, State, Federal, or other public agency, either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

Reviewing agency means a State agency with an approved permitting program under Title V of the Act. An EPA Regional Office is the reviewing agency where the State does not have such an approved permitting program.

State means a State or local air pollution control agency.

[57 FR 61992, Dec. 29, 1992, as amended at 59 FR 59924, Nov. 21, 1994]

§ 63.72 General provisions for compliance extensions.

(a) Except as provided in paragraph (f) of this section, a permitting authority acting pursuant to a permitting program approved under Title V of the Act shall by permit allow an existing source to meet an alternative emission limitation in lieu of an emission limitation promulgated under section 112(d) of the Act for a period of 6 years from the compliance date of the otherwise applicable standard provided the source owner or operator demonstrates:

(1) According to the requirements of § 63.74 that the source has achieved a reduction of 90 percent (95 percent or more in the case of hazardous air pollutants which are particulates) in emissions of:

(i) Total hazardous air pollutants from the source;

(ii) Total hazardous air pollutants from the source as adjusted for high-risk pollutant weighting factors, if applicable.

(2) That such reduction was achieved before proposal of an applicable standard or, for sources eligible to qualify for an alternative emission limitation as specified in paragraph (c) of this section, before January 1, 1994.

(b) A source granted an alternative emission limitation shall comply with an applicable standard issued under section 112(d) of the Act immediately upon expiration of the six year compliance extension period specified in paragraph (a) of this section.

(c) An existing source that achieves the reduction specified in paragraph (a)(1) of this section after proposal of an applicable section 112(d) standard but before January 1, 1994, may qualify for an alternative emission limitation under paragraph (a) of this section if the source makes an enforceable commitment, prior to proposal of the applicable standard, to achieve such reduction. The enforceable commitment shall be made according to the procedures and requirements of § 63.75.

(d) For each permit issued to a source under paragraph (a) of this section, there shall be established as part of the permit an enforceable alternative emission limitation for hazardous air pollutants reflecting the reduction which qualified the source for the alternative emission limitation.

(e) An alternative emission limitation shall not be available with respect to standards or requirements promulgated to provide an ample margin of safety to protect public health pursuant to section 112(f) of the Act, and the Administrator will, for the purpose of determining whether a standard under section 112(f) of the Act is necessary, review emissions from sources granted an alternative emission limitation under this subpart at the same time that other sources in the category or subcategory are reviewed.

(f) Nothing in this subpart shall preclude a State from requiring hazardous air pollutant reductions in excess of 90 percent (95 percent in the case of particulate hazardous air pollutants) as a condition of such State granting an alternative emission limitation authorized in paragraph (a) of this section.

§ 63.73 Source.

(a) An alternative emission limitation may be granted under this subpart to an existing source. For the purposes of this subpart only, a source is defined as follows:

(1) A building structure, facility, or installation identified as a source by the EPA in appendix B of this part;

(2) All portions of an entire contiguous plant site under common ownership or control that emit hazardous air pollutants;

(3) Any portion of an entire contiguous plant site under common ownership or control that emits hazardous air pollutants and can be identified as a facility, building, structure, or installation for the purposes of establishing standards under section 112(d) of the Act; or

(4) Any individual emission point or combination of emission points within a contiguous plant site under common control, provided that emission reduction from such point or aggregation of points constitutes a significant reduction of hazardous air pollutant emis-

sions of the entire contiguous plant site.

(b) For purposes of paragraph (a)(4) of this section, emissions reductions are considered significant if they are made from base year emissions of not less than:

(1) A total of 10 tons per year of hazardous air pollutants where the total emissions of hazardous air pollutants in the base year from the entire contiguous plant site is greater than 25 tons per; or

(2) A total of 5 tons per year of hazardous air pollutants where the total emissions of hazardous air pollutants in the base year from the entire contiguous plant site is less than or equal to 25 tons per year.

§ 63.74 Demonstration of early reduction.

(a) An owner or operator applying for an alternative emission limitation shall demonstrate achieving early reductions as required by § 63.72(a)(1) by following the procedures in this section.

(b) An owner or operator shall establish the source for the purposes of this subpart by documenting the following information:

(1) A description of the source including: a site plan of the entire contiguous plant site under common control which contains the source, markings on the site plan locating the parts of the site that constitute the source, and the activity at the source which causes hazardous air pollutant emissions;

(2) A complete list of all emission points of hazardous air pollutants in the source, including identification numbers and short descriptive titles; and

(3) A statement showing that the source conforms to one of the allowable definition options from § 63.73. For a source conforming to the option in § 63.73(a)(4), the total base year emissions from the source, as determined pursuant to this section, shall be demonstrated to be at least:

(i) 5 tons per year, for cases in which total hazardous air pollutant emissions from the entire contiguous plant site under common control are 25 tons per year or less as calculated under paragraph (1) of this section; or

(ii) 10 tons per year in all other cases.

(c) An owner or operator shall establish base year emissions for the source by providing the following information:

(1) The base year chosen, where the base year shall be 1987 or later except that the base year may be 1985 or 1986 if the owner or operator of the source can demonstrate that emission data for the source for 1985 or 1986 was submitted to the Administrator pursuant to an information request issued under section 114 of the Act and was received by the Administrator prior to November 15, 1990;

(2) The best available data accounting for actual emissions, during the base year, of all hazardous air pollutants from each emission point listed in the source in paragraph (b)(2) of this section;

(3) The supporting basis for each emission number provided in paragraph (c)(2) of this section including:

(i) For test results submitted as the supporting basis, a description of the test protocol followed, any problems encountered during the testing, and a discussion of the validity of the method for measuring the subject emissions; and

(ii) For calculations based on emission factors, material balance, or engineering principles and submitted as the supporting basis, a step-by-step description of the calculations, including assumptions used and their bases, and a brief rationale for the validity of the calculation method used; and

(4) Evidence that the emissions provided under paragraph (c)(2) of this section are not artificially or substantially greater than emissions in other years prior to implementation of emission reduction measures.

(d) An owner or operator shall establish post-reduction emissions by providing the following information:

(1) For the emission points listed in the source in paragraph (b)(2) of this section, a description of all control measures employed to achieve the emission reduction required by § 63.72(a)(1);

(2) The best available data accounting for actual emissions, during the year following the applicable emission reduction deadline as specified in § 63.72(a)(2), of all hazardous air pollut-

ants from each emission point in the source listed pursuant to paragraph (b)(2) of this section.

(3) The supporting basis for each emission number provided in paragraph (d)(2) of this section including:

(i) For test results submitted as the supporting basis, a description of the test protocol followed, any problems encountered during the testing, and a discussion of the validity of the method for measuring the subject emissions; and

(ii) For calculations based on emission factors, material balance, or engineering principles and submitted as the supporting basis, a step-by-step description of the calculations, including assumptions used and their bases, and a brief rationale for the validity of the calculation method used;

(4) [Reserved]

(5) Evidence that there was no increase in radionuclide emissions from the source.

(e)(1) An owner or operator shall demonstrate that both total base year emissions and total base year emissions adjusted for high-risk pollutants, as applicable, have been reduced by at least 90 percent for gaseous hazardous air pollutants emitted and 95 percent for particulate hazardous air pollutants emitted by determining the following for gaseous and particulate emissions separately:

(i) Total base year emissions, calculated by summing all base year emission data from paragraph (c)(2) of this section;

(ii) Total post-reduction emissions, calculated by summing all post-reduction emission data from paragraph (d)(2) of this section;

(iii) (If applicable) Total base year emissions adjusted for high-risk pollutants, calculated by multiplying each emission number for a pollutant from paragraph (c)(2) of this section by the appropriate weighting factor for the pollutant from Table 1 in paragraph (f) of this section and then summing all weighted emission data;

(iv) (If applicable) Total post-reduction emissions adjusted for high-risk pollutants, calculated by multiplying each emission number for a pollutant from paragraph (d)(2) of this section by the appropriate weighting factor for

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the pollutant from Table 1 and then summing all weighted emission data; and

(v) Percent reductions, calculated by dividing the difference between base year and post-reduction emissions by the base year emissions. Separate demonstrations are required for total gaseous and particulate emissions, and total gaseous and particulate emissions adjusted for high-risk pollutants.

(2) If any points in the source emit both particulate and gaseous pollutants, as an alternative to the demonstration required in paragraph (e)(1) of this section, an owner or operator may demonstrate:

(i) A weighted average percent reduction for all points emitting both particulate and gaseous pollutants where the weighted average percent reduction is determined by

$$\%_w = \frac{0.9(\sum M_g) + 0.95(\sum M_p)}{\sum M_g + \sum M_p} \times 100$$

where %_w=the required weighted percent reduction

Σ M_g=the total mass rate (e.g., kg/yr) of all gaseous emissions

Σ M_p=the total mass rate of all particulate emissions and,

(ii) The reductions required in paragraph (e)(1) of this section for all other points in the source.

(f) If lower rates or hours are used to achieve all or part of the emission reduction, any hazardous air pollutant emissions that occur from a compensating increase in rates or hours from the same activity elsewhere within the plant site which contains the source shall be counted in the post-reduction emissions from the source. If emission reductions are achieved by shutting down process equipment and the shutdown equipment is restarted or replaced anywhere within the plant site, any hazardous air pollutant emissions from the restarted or replacement equipment shall be counted in the post-reduction emissions for the source.

TABLE 1—LIST OF HIGH-RISK POLLUTANTS

CAS No.	Chemical	Weighting factor
53963	2-Acetylaminofluorene	100

TABLE 1—LIST OF HIGH-RISK POLLUTANTS—Continued

CAS No.	Chemical	Weighting factor
107028	Acrolein	100
79061	Acrylamide	10
107131	Acrylonitrile	10
0	Arsenic compounds	100
1332214	Asbestos	100
71432	Benzene	10
92875	Benzidine	1000
0	Beryllium compounds	10
542881	Bis(chloromethyl) ether	1000
106990	1,3-Butadiene	10
0	Cadmium compounds	10
57749	Chlordane	100
532274	2-Chloroacetophenone	100
0	Chromium compounds	100
107302	Chloromethyl methyl ether	10
0	Coke oven emissions	10
334883	Diazomethane	10
132649	Dibenzofuran	10
96128	1,2-Dibromo-3-chloropropane	10
111444	Dichloroethyl ether (Bis(2-chloroethyl) ether)	10
79447	Dimethylcarbamoyl chloride	100
122667	1,2-Diphenylhydrazine	10
106934	Ethylene dibromide	10
151564	Ethylenimine (Aziridine)	100
75218	Ethylene oxide	10
76448	Heptachlor	100
118741	Hexachlorobenzene	100
77474	Hexachlorocyclopentadiene	10
302012	Hydrazine	100
0	Manganese compounds	10
0	Mercury compounds	100
60344	Methyl hydrazine	10
624839	Methyl isocyanate	10
0	Nickel compounds	10
62759	N-Nitrosodimethylamine	100
684935	N-Nitroso-N-methylurea	1000
56382	Parathion	10
75445	Phosgene	10
7803512	Phosphine	10
7723140	Phosphorus	10
75558	1,2-Propylenimine	100
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin	100,000
8001352	Toxaphene (chlorinated camphene)	100
75014	Vinyl chloride	10

(g) The best available data representing actual emissions for the purpose of establishing base year or post-reduction emissions under this section shall consist of documented results from source tests using an EPA Reference Method, EPA Conditional Method, or the owner's or operator's source test method which has been validated pursuant to Method 301 of appendix A of this part. However, if one of the following conditions exists, an owner or operator may submit, in lieu of results from source tests, calculations based on engineering principles, emission factors, or material balance data as actual

emission data for establishing base year or post-reduction emissions:

(1) No applicable EPA Reference Method, EPA Conditional Method, or other source test method exists;

(2) It is not technologically or economically feasible to perform source tests;

(3) It can be demonstrated to the satisfaction of the reviewing agency that the calculations will provide emission estimates of accuracy comparable to that of any applicable source test method;

(4) For base year emission estimates only, the base year conditions no longer exist at an emission point in the source and emission data could not be produced for such an emission point, by performing source tests under currently existing conditions and converting the test results to reflect base year conditions, that is more accurate than an estimate produced by using engineering principles, emission factors, or a material balance; or

(5) The emissions from one or a set of emission points in the source are small compared to total source emissions and potential errors in establishing emissions from such points will not have a significant effect on the accuracy of total emissions established for the source.

(h) For base year or post-reduction emissions established under this section that are not supported by source test data, the source owner or operator shall include the reason source testing was not performed.

(i) [Reserved]

(j) The EPA average emission factors for equipment leaks cannot be used under this subpart to establish base year emissions for equipment leak sources, unless the base year emission number calculated using the EPA average emission factors for equipment leaks also is used as the post-reduction emission number for equipment leaks from the source.

(k) A source owner or operator shall not establish base year or post-reduction emissions that include any emissions from the source exceeding allowable emission levels specified in any applicable law, regulation, or permit condition.

(l) For sources subject to paragraph (b)(3)(i) of this section, an owner or operator shall document total base year emissions from an entire contiguous plant site under common control by providing the information required pursuant to paragraphs (b)(2), (c)(2), and (e)(1)(i) of this section for all hazardous air pollutants from all emission points in the contiguous plant site under common control.

(m) If a new pollutant is added to the list of hazardous air pollutants or high-risk pollutants, any source emitting such pollutant will not be required to revise an early reduction demonstration pursuant to this section if:

(1) Alternative emission limits have previously been specified by permit for the source as provided for in § 63.72(a); or

(2) The base year emissions submitted in an enforceable commitment have previously been approved by the reviewing agency.

[57 FR 61992, Dec. 29, 1992, as amended at 58 FR 62543, Nov. 29, 1993; 59 FR 53110, Oct. 21, 1994]

§ 63.75 Enforceable commitments.

(a) To make an enforceable commitment an owner or operator shall submit a commitment to achieve the early reductions required under § 63.72(a)(1) to the appropriate EPA Regional Office and a copy of the commitment to the appropriate State, except that the commitment shall be submitted to the State and a copy to the EPA Regional Office if the State has an approved permitting program under Title V of the Act. A copy shall also be submitted to both the EPA Stationary Source Compliance Division (EN-341W), 401 M Street, SW., Washington, DC 20460 and the EPA Emission Standards Division (MD-13), Research Triangle Park, NC 27711; attention both to the Early Reductions Officer. The commitment shall contain:

(1) The name and address of the source;

(2) The name and telephone number of the source owner or operator or other responsible official who can be contacted concerning the commitment;

(3) An alternative mailing address if correspondence is to be directed to a

location other than that given in paragraph (a)(1) of this section;

(4) All information specified in § 63.74(b), (c) and (e)(1)(i), which defines and describes the source and establishes the base year hazardous air pollutant emissions from the source;

(5) The general plan for achieving the required hazardous air pollutant emissions reductions at the source including descriptions of emission control equipment to be employed, process changes or modifications to be made, and any other emission reduction measures to be used; and

(6) A statement of commitment, signed by a responsible official of the source, containing the following:

(i) A statement providing the post-reduction emission levels for total hazardous air pollutants and high-risk pollutants, as applicable, from the source on an annual basis which reflect a 90 percent (95 percent for particulate pollutants) reduction from base year emissions;

(ii) A statement certifying that the base year emission data submitted as part of the enforceable commitment constitute the best available data for base year emissions from the source, are correct to the best of the responsible official's knowledge, and are within allowable levels specified in any applicable law, regulation, or permit;

(iii) A statement that it is understood by the source owner or operator that submission of base year emissions constitutes a response to an EPA request under the authority of section 114 of the Act and that the commitment is subject to enforcement according to § 63.80; and

(iv) A statement committing the source owner or operator to achieving the emission levels, listed in paragraph (a)(6), (i) of this section, at the source before January 1, 1994.

(b) The following language may be used to satisfy the requirements of paragraphs (a)(6)(ii) through (a)(6)(iv) of this section:

I certify to the best of my knowledge that the base year emissions given above are correct and constitute the best available data for base year emissions from the source, and acknowledge that these estimates are being submitted in response to an EPA request under section 114 of the Act. I further certify that the base year emissions provided for all

emission points in the source do not exceed allowable emission levels specified in any applicable law, regulation, or permit condition. I commit to achieve before January 1, 1994, the stated post-reduction emission level(s) at the source, which will provide the 90 (95) percent reduction required to qualify for the compliance extension, and acknowledge that this commitment is enforceable as specified in title 40, part 63, subpart D, of the Code of Federal Regulations.

(c) A commitment for a source shall be submitted prior to proposal of an applicable standard issued under section 112(d) of the Act. Commitments received after the proposal date shall be void.

(d) If test results for one or more emission points in a source are required to support base year emissions in an enforceable commitment but are not available prior to proposal of an applicable standard issued under section 112(d) of the Act, the test results may be submitted after the enforceable commitment is made but no later than 180 days after proposal of an applicable standard. In such cases, the enforceable commitment shall contain the best substitute emission data for the points in the source for which test results will be submitted later.

(e) An owner or operator may rescind such a commitment prior to December 1, 1993 without penalty and forfeit the opportunity to obtain a six year compliance extension under this subpart.

(f) An enforceable commitment submitted under this section shall not be in effect and enforceable until the base year emissions contained in the commitment have been approved according to the procedures in § 63.76. An owner or operator is under no obligation to continue to seek approval of commitments that have not been approved by December 1, 1993.

(g) The control measure information required under § 63.74(d)(1) as part of post-reduction emission documentation and submitted in a permit application according to the provisions of § 63.77 shall become part of an existing enforceable commitment upon receipt of the permit application by the permitting authority. An owner or operator shall notify the permitting authority of any change made to the source during calendar year 1994 which affects such control measure information and

shall mail the notice within 5 days (postmark date) of making the change. The notice shall be considered an amendment to the source's enforceable commitment.

[57 FR 61992, Dec. 29, 1992, as amended at 58 FR 34370, June 25, 1993; 58 FR 62543, Nov. 29, 1993; 59 FR 59924, Nov. 21, 1994]

§ 63.76 Review of base year emissions.

(a) Pursuant to the procedures of this section, the appropriate reviewing agency shall review and approve or disapprove base year emission data submitted in an enforceable commitment under § 63.75 or in a request letter from an applicant that wishes to participate in the early reduction program but who is not required to submit an enforceable commitment. For review requests submitted to a State agency as the appropriate reviewing agency, a copy of the request also shall be submitted to the applicable EPA Regional Office. For review requests submitted to the EPA Regional Office as the appropriate reviewing agency, a copy of the request also shall be sent to the applicable State agency. Copies also shall be submitted to the EPA Stationary Source Compliance Division (EN-341W), 401 M Street, SW., Washington, DC 20460 and the EPA Emission Standards Division (MD-13), Research Triangle Park, NC 27711; to the attention of the Early Reductions Officer.

(b) Within 30 days of receipt of an enforceable commitment or base year emission data, the reviewing agency shall advise the applicant that:

(1) The base year emission data are complete as submitted; or

(2) The base year emission data are not complete and include a list of deficiencies that must be corrected before review can proceed.

(c) EPA will publish a notice in the FEDERAL REGISTER which contains a list, accumulated for the previous month, of the sources for which complete base year emission data have been submitted and which are undergoing review either in the EPA Regional Office or a State agency within the EPA region. The notice will contain the name and location of each source and a contract in the EPA Regional Office for additional information.

(d) Within 60 days of a determination that a base year emission data submission is complete, the reviewing agency shall evaluate the adequacy of the submission with respect to the requirements of § 63.74 (b) and (c) and either:

(1) Determine to approve the submission and publish a notice in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice, providing the aggregate base year emission data for the source and the rationale for the proposed approval, noting the availability of the nonconfidential information contained in the submission for public inspection in at least one location in the community in which the source is located, providing for a public hearing upon request by an interested party, and establishing a 30 day public comment period that can be extended to 60 days upon request by an interested party; or

(2) Determine to disapprove the base year emission data and give notice to the applicant of the reasons for the disapproval. An applicant may correct disapproved base year data and submit revised data for review in accordance with this subsection, except that the review of a revision shall be accomplished within 30 days.

(e) If no adverse public comments are received by the reviewing agency on proposed base year data for a source, the data shall be considered approved at the close of the public comment period and a notice of the approval shall be sent to the applicant and published by the reviewing agency by advertisement in the area affected.

(f) If adverse comments are received and the reviewing agency agrees that corrections are needed, the reviewing agency shall give notice to the applicant of the disapproval and reasons for the disapproval. An applicant may correct disapproved base year emission data and submit revised emission data. If a revision is submitted by the applicant that, to the satisfaction of the reviewing agency, takes into account the adverse comments, the reviewing agency will publish by advertisement in the area affected a notice containing the approved base year emission data for

the source and send notice of the approval to the applicant.

(g) If adverse comments are received and the reviewing agency determines that the comments do not warrant changes to the base year emission data, the reviewing agency will publish by advertisement in the area affected a notice containing the approved base year emission data for the source and the reasons for not accepting the adverse comments. A notice of the approval also shall be sent to the applicant.

(h) If an applicant submits revised emission data under paragraph (d)(2) or (f) of this section for a source subject to an enforceable commitment, the applicant also shall submit an amended enforceable commitment which takes into account the revised base year emissions.

(i) If revised base year emission data are not submitted or notice of intent to submit revised data is not provided to the permitting authority by an applicant within 90 days of receiving adverse comments or a notice of disapproved base year emission data for a source that is subject to an enforceable commitment, the enforceable commitment shall be considered withdrawn and a notice to that effect shall be sent by the reviewing agency to the applicant.

§ 63.77 Application procedures.

(a) To apply for an alternative emission limitation under § 63.72, an owner or operator of the source shall file a permit application with the appropriate permitting authority.

(b) Except as provided in paragraph (e) of this section, the permit application shall contain the information required by § 63.74, as applicable, and the additional information required for a complete permit application as specified by the applicable permit program established pursuant to title V of the Act.

(c) Permit applications under this section for sources not subject to enforceable commitments shall be submitted by the later of the following dates:

(1) 120 days after proposal of an otherwise applicable standard issued under section 112(d) of the Act; or

(2) 120 days after the date an applicable permit program is approved or established pursuant to title V of the Act.

(d) Permit applications for sources subject to enforceable commitments pursuant to § 63.75 shall be submitted no later than April 30, 1994.

(e) If the post-reduction year does not end at least one month before the permit application deadline under paragraph (c) of this section, the source may file the post-reduction emissions information required under § 63.74(d)(2), (d)(3), and (d)(5) later as a supplement to the original permit application. In such cases, this supplemental information shall be submitted to the permitting authority no later than one month after the end of the post-reduction year.

(f) If a source test will be the supporting basis for establishing post-reduction emissions for one or more emissions units in the early reductions source, the test results shall be submitted by the applicable deadline for submittal of a permit application as specified in paragraph (c) or (d) of this section.

(g) Review and disposition of permit applications submitted under this section will be accomplished according to the provisions of the applicable permit program established pursuant to title V of the Act.

[58 FR 62543, Nov. 29, 1993, as amended at 59 FR 59924, Nov. 21, 1994]

§ 63.78 Early reduction demonstration evaluation.

(a) The permitting authority will evaluate an early reduction demonstration submitted by the source owner or operator in a permit application with respect to the requirements of § 63.74.

(b) An application for a compliance extension may be denied if, in the judgement of the permitting authority, the owner or operator has failed to demonstrate that the requirements of § 63.74 have been met. Specific reasons for denial include, but are not limited to:

(1) The information supplied by the owner or operator is incomplete;

(2) The required 90 percent reduction (95 percent in cases where the hazardous air pollutant is particulate matter) has not been demonstrated;

(3) The base year or post-reduction emissions are incorrect, based on methods or assumptions that are not valid, or not sufficiently reliable or well documented to determine with reasonable certainty that required reductions have been achieved; or

(4) The emission of hazardous air pollutants or the performance of emission control measures is unreliable so as to preclude determination that the required reductions have been achieved or will continue to be achieved during the extension period.

§ 63.79 Approval of applications.

(a) If an early reduction demonstration is approved and other requirements for a complete permit application are met, the permitting authority shall establish by a permit issued pursuant to title V of the Act enforceable alternative emissions limitations for the source reflecting the reduction which qualified the source for the extension. However, if it is not feasible to prescribe a numerical emissions limitation for one or more emission points in the source, the permitting authority shall establish such other requirements, reflecting the reduction which qualified the source for an extension, in order to assure the source achieves the 90 percent or 95 percent reduction, as applicable.

(b) An alternative emissions limitation or other requirement prescribed pursuant to paragraph (a) of this section shall be effective and enforceable immediately upon issuance of the permit for the source and shall expire exactly six years after the compliance date of an otherwise applicable standard issued pursuant to section 112(d) of the Act.

§ 63.80 Enforcement.

(a) All base year or post-reduction emissions information described in § 63.74 and required to be submitted as part of a permit application under § 63.77 or an enforceable commitment under § 63.75 shall be considered to have been requested by the Administrator

under the authority of section 114 of the Act.

(b) Fraudulent statements contained in any base year or post-reduction emissions submitted to a State or EPA Regional Office under this subpart shall be considered violations of section 114 of the Act and of this subpart and, thus, actionable under section 113 of the Act and can be considered, in appropriate cases, violations of 18 U.S.C. 1001, the general false swearing provision of the United States Code.

(c) If a source subject to an enforceable commitment fails to achieve reductions before January 1, 1994, sufficient to qualify the source for an extension under this subpart, the source shall be considered to be in violation of the commitment and shall be subject to enforcement action under section 113 of the Act.

(d) If an early reduction demonstration in a permit application filed under § 63.77 is disapproved for a source not subject to an enforceable commitment, the owner or operator shall comply with an applicable standard issued under section 112(d) of the Act by the compliance date specified in such standard.

(e) If an early reduction demonstration in a permit application filed under § 63.77 is disapproved for a source that is subject to an enforceable commitment, the owner or operator shall comply with an applicable standard issued under section 112(d) of the Act by the compliance date specified in such standard and will be subject to enforcement action under section 113 of the Act.

(f) A violation of an alternative emission limitation or other requirement established by permit under § 63.79 (a) or (b) for the source is enforceable pursuant to the authority of section 113 of the Act notwithstanding any demonstration of continuing 90 percent (95 percent for hazardous air pollutants which are particulates) emission reduction over the entire source.

§ 63.81 Rules for special situations.

(a) If more than one standard issued under section 112(d) of the Act would be applicable to a source as defined under § 63.73, then the date of proposal referred to in §§ 63.72(a)(2), 63.72(c),

63.74(d)(4), 63.75(c), and 63.77(c) is the date the first applicable standard is proposed.

(b) Sources emitting radionuclides are not required to reduce radionuclides by 90 (95) percent. Radionuclides may not be increased from the source as a result of the early reductions demonstration.

Subpart E—Approval of State Programs and Delegation of Federal Authorities

SOURCE: 58 FR 62283, Nov. 26, 1993, unless otherwise noted.

§ 63.90 Program overview.

The regulations in this subpart establish procedures consistent with section 112(l) of the Clean Air Act (Act) (42 U.S.C. 7401-7671q). This subpart establishes procedures for the approval of State rules or programs to be implemented and enforced in place of certain otherwise applicable section 112 Federal rules, emission standards or requirements (including section 112 rules promulgated under the authority of the Act prior to the 1990 Amendments to the Act). Authority to implement and enforce section 112 Federal rules as promulgated without changes may be delegated under procedures established in this subpart. In this process, States may seek approval of a State mechanism for receiving delegation of existing and future unchanged Federal section 112 standards. This subpart also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities delegated through this subpart. This subpart also establishes procedures for the approval of State rules or programs to establish limitations on the potential to emit pollutants listed in or pursuant to section 112(b) of the Act.

(a) *Definitions.* The following definitions apply to this subpart.

Applicability criteria means the regulatory criteria used to define all emission points within all affected sources subject to a specific section 112 rule.

Approval means a determination by the Administrator that a State rule or program meets the criteria of § 63.91 and the additional criteria of either § 63.92, § 63.93 or § 63.94, where appro-

priate. For accidental release prevention programs, the criteria of § 63.95 must also be met.

Compliance and enforcement measures means requirements within a rule or program relating to compliance and enforcement, including but not necessarily limited to monitoring, test methods and procedures, record-keeping, reporting, compliance certification, inspection, entry, sampling or accidental release prevention oversight.

Level of control means the degree to which a rule or program requires a source to limit emissions or to employ design, equipment, work practice, operational, accident prevention or other requirements or techniques (including a prohibition of emissions) for:

(1)(i) Each hazardous air pollutant, if individual pollutants are subject to emission limitations, and

(ii) The aggregate total of hazardous air pollutants, if the aggregate grouping is subject to emission limitations, provided that the rule or program would not lead to an increase in risk to human health or the environment; and

(2) Each substance regulated under section 112(r).

Local agency means a local air pollution control agency or, for the purposes of § 63.95, any local agency or entity having responsibility for preventing accidental releases which may occur at a source regulated under section 112(r).

Program means, for the purposes of an approval under § 63.94, a collection of State statutes, rules or other requirements which limits or will limit the emissions of hazardous air pollutants from affected sources.

Stringent or stringency means the degree of rigor, strictness or severity a statute, rule, emission standard or requirement imposes on an affected source as measured by the quantity of emissions, or as measured by parameters relating to rule applicability and level of control, or as otherwise determined by the Administrator.

(b) *Local agency coordination with state and territorial agencies.* Local agencies submitting a rule or program for approval under this subpart shall consult with the relevant State or Territorial agency prior to making a request for approval to the Administrator. A

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State or Territorial agency may submit requests for approval on behalf of a local agency after consulting with that local agency.

(c) *Authorities retained by the Administrator.* (1) The following authorities will be retained by the Administrator and will not be delegated:

(i) The authority to add or delete pollutants from the list of hazardous air pollutants established under section 112(b);

(ii) The authority to add or delete substances from the list of substances established under section 112(r);

(iii) The authority to delete source categories from the Federal source category list established under section 112(c)(1) or to subcategorize categories on the Federal source category list after proposal of a relevant emission standard;

(iv) The authority to revise the source category schedule established under section 112(e) by moving a source category to a later date for promulgation; and

(v) Any other authorities determined to be nondelegable by the Administrator.

(2) Nothing in this subpart shall prohibit the Administrator from enforcing any applicable rule, emission standard or requirement established under section 112.

(3) Nothing in this subpart shall affect the authorities and obligations of the Administrator or the State under title V of the Act or under regulations promulgated pursuant to that title.

(d) *Federally-enforceable requirements.* All rules and requirements approved under this subpart and all resulting part 70 operating permit conditions are enforceable by the Administrator and citizens under the Act.

(e) *Standards not subject to modification or substitution.* With respect to radionuclide emissions from licensees of the Nuclear Regulatory Commission or licensees of Nuclear Regulatory Commission Agreement States which are subject to 40 CFR part 61, subpart I, T, or W, a State may request that the EPA approve delegation of implementation and enforcement of the Federal standard pursuant to § 63.91, but no changes or modifications in the form or content of the standard will be ap-

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proved pursuant to § 63.92, § 63.93, or § 63.94.

[58 FR 62283, Nov. 26, 1993, as amended at 61 FR 36297, July 10, 1996]

§ 63.91 Criteria common to all approval options.

(a) Approval process. To obtain approval under this subpart of a rule or program that is different from the Federal rule, the criteria of this section and the criteria of either § 63.92, § 63.93 or § 63.94 must be met. For approval of State programs to implement and enforce Federal section 112 rules as promulgated without changes (except for accidental release programs), only the criteria of this section must be met. This includes State requests for upfront approval of their mechanism for taking delegation of future unchanged Federal section 112 standards and requirements as well as approval to implement and enforce unchanged Federal section 112 standards and requirements on a rule-by rule basis. For approval of State rules or programs to implement and enforce the Federal accidental release prevention program as promulgated without changes, the requirements of this section and section § 63.95 must be met. In the case of accidental release prevention programs which differ from the Federal accidental release prevention program, the requirements of this section, § 63.95, and either § 63.92 or § 63.93 must be met. The Administrator may, under the authority of Section 112(l) and this subpart, also approve a State program designed to establish limits on the potential to emit of pollutants listed pursuant to Section 112(b) of the Clean Air Act. For a State's initial request for approval of any rule or program under this subpart, and except as otherwise specified under § 63.92, § 63.93, or § 63.94 for a State's subsequent requests for approval, the approval process will be the following:

(1) Upon receipt of a request for approval, the EPA will review the request for approval and notify the State within 30 days of receipt whether the request for approval is complete according to the criteria in this subpart. If a

request for approval is found to be incomplete, the Administrator will so notify the State and will specify the deficient elements of the State's request.

(2) Within 45 days after receipt of a complete request for approval, the Administrator will seek public comment for a minimum of 30 days on the State request for approval. The Administrator will require that comments be submitted concurrently to the State.

(3) If, after review of public comments and any State responses to comments submitted to the Administrator within 30 days of the close of the public comment period, the Administrator finds that the criteria of this section are met, the State rule or program will be approved by the Administrator under this section, published in the FEDERAL REGISTER, and incorporated directly or by reference, in the appropriate subpart of part 63. Authorities approved under § 63.95 will be incorporated pursuant to requirements under section 112(r).

(4) Within 180 days of receiving a complete request for approval, the Administrator will either approve or disapprove the State rule or program.

(5) If the Administrator finds that; any of the criteria of this section are not met, or any of the criteria of either § 63.92, § 63.93 or § 63.94 under which the request for approval was made are not met, the Administrator will disapprove the State rule or program. If a State rule or program is disapproved, the Administrator will notify the State of any revisions or additions necessary to obtain approval. Any resubmittal by a State of a request for approval will be considered a new request under this subpart.

(6) If the Administrator finds that; all of the criteria of this section are met; and all of the criteria of either § 63.92, § 63.93 or § 63.94 are met, the Administrator will approve the State rule or program and thereby delegate authority to implement and enforce the approved rule or program in lieu of the otherwise applicable Federal rules, emission standards or requirements. The approved State rule or program shall be Federally enforceable from the date of publication of approval. When a State rule or program is approved by the Administrator under this subpart,

applicable part 70 permits shall be revised according to the provisions of § 70.7(f) of this chapter. Operating permit conditions resulting from any otherwise applicable Federal section 112 rules, emission standards or requirements will not be expressed in the State's part 70 permits or otherwise implemented or enforced by the State or by the EPA unless and until authority to enforce the approved State rule or program is withdrawn from the State under § 63.96. In the event approval is withdrawn under § 63.96, all otherwise applicable Federal rules and requirements shall be enforceable in accordance with the compliance schedule established in the withdrawal notice and relevant part 70 permits shall be revised according to the provisions of § 70.7(f) of this chapter.

(b) *Criteria for approval.* Any request for approval under this subpart shall meet all section 112(l) approval criteria specified by the otherwise applicable Federal rule, emission standard or requirements and all of the approval criteria of this section. The State shall provide the Administrator with the following.

(1) A written finding by the State Attorney General (or for a local agency, the General Counsel with full authority to represent the local agency) that the State has the necessary legal authority to implement and to enforce the State rule or program upon approval and to assure compliance by all sources within the State with each applicable section 112 rule, emission standard or requirement. At a minimum, the State must have the following legal authorities concerning enforcement:

(i) The State shall have enforcement authorities that meet the requirements of § 70.11 of this chapter.

(ii) The State shall have authority to request information from regulated sources regarding their compliance status.

(iii) The State shall have authority to inspect sources and any records required to determine a source's compliance status.

(iv) If a State delegates authorities to a local agency, the State must retain enforcement authority unless the local agency has authorities that meet

the requirements of § 70.11 of this chapter.

(2) A copy of State statutes, regulations and other requirements that contain the appropriate provisions granting authority to implement and enforce the State rule or program upon approval.

(3) A demonstration that the State has adequate resources to implement and enforce all aspects of the rule or program upon approval, which includes:

(i) A description in narrative form of the scope, structure, coverage and processes of the State program;

(ii) A description of the organization and structure of the agency or agencies that will have responsibility for administering the program; and

(iii) A description of the agency staff who will carry out the State program, including the number, occupation, and general duties of the employees.

(4) A schedule demonstrating expeditious State implementation of the rule or program upon approval.

(5) A plan that assures expeditious compliance by all sources subject to the rule or program upon approval. The plan should include at a minimum a complete description of the State's compliance tracking and enforcement program, including but not limited to inspection strategies.

(6) A demonstration of adequate legal authority to assure compliance with the rule or program upon approval. At a minimum, the State must have the following legal authorities concerning enforcement:

(i) The State shall have enforcement authorities that meet the requirements of § 70.11 of this chapter.

(ii) If a State delegates authorities to a local agency, the State must retain enforcement authority unless the local agency has authorities that meet the requirements of § 70.11 of this chapter.

(c) *Revisions.* Within 90 days of any State amendment, repeal or revision of any State rule, program, or other authorities supporting an approval under this subpart, a State must provide the Administrator with a copy of the revised authorities and meet the requirements of either paragraph (c) (1) or (2) of this section.

(1)(i) The State shall provide the Administrator with a written finding by the State Attorney General (or for a local agency, the General Counsel with full authority to represent the local agency) that the State's revised legal authorities are adequate to continue to implement and to enforce all previously approved State rules and the approved State program (as applicable) and adequate to continue to assure compliance by all sources within the State with approved rules, the approved program (as applicable) and each applicable section 112 rule, emission standard or requirement.

(ii) If the Administrator determines that the written finding is not adequate, the State shall request approval of the revised rule or program according to the provisions of paragraph (c)(2) of this section.

(2) The State shall request approval under this subpart of a revised rule or program.

(i) If the Administrator approves the revised rule or program, the revised rule or program will replace a rule or program previously approved.

(ii) If the Administrator disapproves the revised rule or program, the Administrator will initiate procedures under § 63.96 to withdraw approval of any previously approved rule or program that may be affected by the revised authorities.

(iii) Until such time as the Administrator approves or withdraws approval of a revised rule or program, the previously approved rule or program remains Federally enforceable.

[58 FR 62283, Nov. 26, 1993, as amended at 61 FR 36297, July 10, 1996]

§ 63.92 Approval of a State rule that adjusts a section 112 rule.

Under this section a State may seek approval of a State rule with specific adjustments to a Federal section 112 rule.

(a) *Approval process.* (1) If the Administrator finds that the criteria of this section and the criteria of § 63.91 are met, the State rule will be approved by the Administrator, published in the FEDERAL REGISTER and incorporated, directly or by reference, in the appropriate subpart of this part 63, without additional notice and opportunity for

comment. Rules approved under § 63.95 will be incorporated pursuant to requirements under section 112(r).

(2) If the Administrator finds that any one of the State adjustments to the Federal rule is in any way ambiguous with respect to the stringency of applicability, the stringency of the level of control, or the stringency of the compliance and enforcement measures for any affected source or emission point, the Administrator will disapprove the State rule.

(3) Within 90 days of receiving a complete request for approval under this section, the Administrator will either approve or disapprove the State rule.

(b) *Criteria for approval.* Any request for approval under this section shall meet all of the criteria of this section and § 63.91 before approval. The State shall provide the Administrator with:

(1) A demonstration that the public within the State has had adequate notice and opportunity to submit written comment on the State rule; and

(2) A demonstration that each State adjustment to the Federal rule individually results in requirements that:

(i) Are unequivocally no less stringent than the otherwise applicable Federal rule with respect to applicability;

(ii) Are unequivocally no less stringent than the otherwise applicable Federal rule with respect to level of control for each affected source and emission point;

(iii) Are unequivocally no less stringent than the otherwise applicable Federal rule with respect to compliance and enforcement measures for each affected source and emission point; and

(iv) Assure compliance by every affected source no later than would be required by the otherwise applicable Federal rule.

(3) State adjustments to Federal section 112 rules which may be part of an approved rule under this section are:

(i) Lowering a required emission rate or de minimis level;

(ii) Adding a design, work practice, operational standard, emission rate or other such requirement;

(iii) Increasing a required control efficiency;

(iv) Increasing the frequency of required reporting, testing, sampling or monitoring;

(v) Adding to the amount of information required for records or reports;

(vi) Decreasing the amount of time to come into compliance;

(vii) Subjecting additional emission points or sources within a source category to control requirements; and

(viii) Any adjustments allowed in a specific section 112 rule.

§ 63.93 Approval of State authorities that substitute for a section 112 rule.

Under this section a State may seek approval of State authorities which differ in form from a Federal section 112 rule for which they would substitute, such that the State authorities do not qualify for approval under § 63.92.

(a) *Approval process.* (1) Within 45 days after receipt of a complete request for approval under this section, the Administrator will seek public comment for a minimum of 30 days on the State request for approval. The Administrator will require that comments be submitted concurrently to the State.

(2) If, after review of public comments and any State responses to comments submitted to the Administrator within 30 days of the close of the public comment period, the Administrator finds that the criteria of this section and the criteria of § 63.91 are met, the State authorities will be approved by the Administrator under this section and the approved authorities will be published in the FEDERAL REGISTER and incorporated directly or by reference, in the appropriate subpart of part 63. Authorities approved under § 63.95 will be incorporated pursuant to requirements under section 112(r).

(3) If the Administrator finds that any of the requirements of this section or § 63.91 have not been met, the Administrator will disapprove the State authorities.

(4) Authorities submitted for approval under this section shall include either:

(i) State rules or other requirements enforceable under State law that would substitute for a section 112 rule; or

(ii)(A) The specific permit terms and conditions for the source or set of sources in the source category for which the State is requesting approval under this section, including control requirements and compliance and enforcement measures, that would substitute for the permit terms and conditions imposed by the otherwise applicable section 112 rule for such source or set of sources.

(B) The Administrator will approve authorities specified under paragraph (a)(4)(ii)(A) of this section only when the State submitting the request already has an approved program under § 63.94, the Federal standard for the source category has been promulgated under section 112(h), and the Administrator has not determined the work practice, design, equipment or operational requirements submitted by the State to be inadequate under the provisions of the Federal standard.

(5) Within 180 days of receiving a complete request for approval under this section, the Administrator will either approve or disapprove the State request.

(b) *Criteria for approval.* Any request for approval under this section shall meet all of the criteria of this section and § 63.91 before approval. The State shall provide the Administrator with detailed documentation that the State authorities contain or demonstrate:

(1) Applicability criteria that are no less stringent than those in the respective Federal rule;

(2) Levels of control and compliance and enforcement measures that result in emission reductions from each affected source or accidental release prevention program requirements for each affected source that are no less stringent than would result from the otherwise applicable Federal rule;

(3) A compliance schedule that assures that each affected source is in compliance no later than would be required by the otherwise applicable Federal rule; and

(4) At a minimum, the approved State authorities must include the following compliance and enforcement measures. (For authorities addressing the accidental release prevention program, minimum compliance and en-

forcement provisions are described in § 63.95.)

(i) The approved authorities must include a method for determining compliance.

(ii) If a standard in the approved authorities is not instantaneous, a maximum averaging time must be established.

(iii) The authorities must establish an obligation to periodically monitor or test for compliance using the method established per § 63.93(b)(4)(i) sufficient to yield reliable data that are representative of the source's compliance status.

[58 FR 62283, Nov. 26, 1993, as amended at 61 FR 36298, July 10, 1996]

§ 63.94 Approval of a State program that substitutes for section 112 emission standards.

Under this section a State may seek approval of a State program to be implemented and enforced in lieu of specified existing and future Federal emission standards or requirements promulgated under sections 112(d), (f) or (h), for those affected sources permitted by the State under part 70 of this chapter.

(a) *Approval process.* (1) Within 45 days after receipt of a complete request for approval under this section the Administrator will seek public comment for a minimum of 30 days on the State request for approval. The Administrator will require that comments be submitted concurrently to the State.

(2) If, after review of all public comments, and State responses to comments submitted to the Administrator within 30 days of the close of the public comment period, the Administrator finds that the criteria of this section and the criteria of § 63.91 are met, the State program will be approved by the Administrator. The approved State commitment made under paragraph (b)(2) of this section and reference to all documents submitted under § 63.91(b)(2) will be published in the FEDERAL REGISTER and incorporated directly or by reference in the appropriate subpart of part 63.

(3) If the Administrator finds that any of the criteria of this section or

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§ 63.91 have not been met, the Administrator will disapprove the State program.

(4) Within 180 days of receiving a complete request for approval under this section, the Administrator will either approve or disapprove the State request.

(b) *Criteria for approval.* Any request for approval under this section shall meet all of the criteria of this section and § 63.91 before approval. The State shall provide the Administrator with:

(1) A reference to all specific sources or source categories listed pursuant to subsection 112(c) for which the State is seeking authority to implement and enforce standards or requirements under this section;

(2) A legally binding commitment adopted through State law that, after approval:

(i) For each source subject to Federal section 112 emission standards or requirements for which approval is sought, part 70 permits shall be issued or revised by the State in accordance with procedures established in part 70 of this chapter and in accordance with the schedule submitted under § 63.91(b)(5) assuring expeditious compliance by all sources; and

(ii) All such issued or revised part 70 permits shall contain conditions that:

(A) Reflect applicability criteria no less stringent than those in the otherwise applicable Federal standards or requirements;

(B) Require levels of control for each affected source and emission point no less stringent than those contained in the otherwise applicable Federal standards or requirements;

(C) Require compliance and enforcement measures for each source and emission point no less stringent than those in the otherwise applicable Federal standards or requirements;

(D) Express levels of control and compliance and enforcement measures in the same form and units of measure as the otherwise applicable Federal standard or requirement;

(E) Assure compliance by each affected source no later than would be required by the otherwise applicable Federal standard or requirement.

§ 63.95 Additional approval criteria for accidental release prevention programs.

(a) A State submission for approval of an Accidental Release Prevention (ARP) program must meet the criteria and be in accordance with the procedures of this section, § 63.91, and, where appropriate, either § 63.92 or § 63.93.

(b) The State ARP program application shall contain the following elements consistent with the procedures in § 63.91 and, where appropriate, either § 63.92 or § 63.93:

(1) A demonstration of the State's authority and resources to implement and enforce regulations which are at least as stringent as regulations promulgated under section 112(r) that specify substances, related thresholds and a risk management program,

(2) Procedures for:

(i) Registration of stationary sources, as defined in section 112(r)(2)(C) of the Act, which clearly identifies the State entity to receive the registration;

(ii) Receiving and reviewing risk management plans;

(iii) Making available to the public any risk management plan submitted to the State pursuant to provisions specified in section 112(r) which are consistent with section 114(c) of the Act; and

(iv) Providing technical assistance to subject sources, including small businesses;

(3) A demonstration of the State's authority to enforce all accidental release prevention requirements including a risk management plan auditing strategy;

(4) A description of the coordination mechanisms the State implementing agency will use with:

(i) The Chemical Safety and Hazard Investigation Board, particularly during accident investigation. This requirement will not take effect until the Chemical Safety and Hazard Investigation Board is convened; and

(ii) The State Emergency Response Commission, and the Local Emergency Planning Committees; and

(iii) The air permitting program with respect to sources subject to both section 112(r) of the Act and permit requirements under part 70 of this chapter.

(c) A State may request approval for a complete or partial program. A partial accidental release prevention program must include the core program elements listed in paragraph (b) of this section.

[58 FR 62283, Nov. 26, 1993, as amended at 61 FR 36298, July 10, 1996]

§ 63.96 Review and withdrawal of approval.

(a) *Submission of information for review of approval.* (1) The Administrator may at any time request any of the following information to review the adequacy of implementation and enforcement of an approved rule or program and the State shall provide that information within 45 days of the Administrator's request:

(i) Copies of any State statutes, rules, regulations or other requirements that have amended, repealed or revised the approved State rule or program since approval or since the immediately previous EPA review;

(ii) Information to demonstrate adequate State enforcement and compliance monitoring activities with respect to all approved State rules and with all section 112 rules, emission standards or requirements;

(iii) Information to demonstrate adequate funding, staff, and other resources to implement and enforce the State's approved rule or program;

(iv) A schedule for implementing the State's approved rule or program that assures compliance with all section 112 rules and requirements that the EPA has promulgated since approval or since the immediately previous EPA review,

(v) A list of part 70 or other permits issued, amended, revised, or revoked since approval or since immediately previous EPA review, for sources subject to a State rule or program approved under this subpart.

(vi) A summary of enforcement actions by the State regarding violations of section 112 requirements, including but not limited to administrative or-

ders and judicial and administrative complaints and settlements.

(2) Upon request by the Administrator, the State shall demonstrate that each State rule, emission standard or requirement applied to an individual source is no less stringent as applied than the otherwise applicable Federal rule, emission standard or requirement.

(b) *Withdrawal of approval of a state rule or program.* (1) If the Administrator has reason to believe that a State is not adequately implementing or enforcing an approved rule or program according to the criteria of this section or that an approved rule or program is not as stringent as the otherwise applicable Federal rule, emission standard or requirements, the Administrator will so inform the State in writing and will identify the reasons why the Administrator believes that the State's rule or program is not adequate. The State shall then initiate action to correct the deficiencies identified by the Administrator and shall inform the Administrator of the actions it has initiated and completed. If the Administrator determines that the State's actions are not adequate to correct the deficiencies, the Administrator will notify the State that the Administrator intends to withdraw approval and will hold a public hearing and seek public comment on the proposed withdrawal of approval. The Administrator will require that comments be submitted concurrently to the State. Upon notification of the intent to withdraw, the State will notify all sources subject to the relevant approved rule or program that withdrawal proceedings have been initiated.

(2) Based on any public comment received and any response to that comment by the State, the Administrator will notify the State of any changes in identified deficiencies or actions needed to correct identified deficiencies. If the State does not correct the identified deficiencies within 90 days after receiving revised notice of deficiencies, the Administrator shall withdraw approval of the State's rule or program upon a determination that:

(i) The State no longer has adequate authorities to assure compliance or resources to implement and enforce the approved rule or program, or

(ii) The State is not adequately implementing or enforcing the approved rule or program, or

(iii) An approved rule or program is not as stringent as the otherwise applicable Federal rule, emission standard or requirement.

(3) The Administrator may withdraw approval for part of a rule, for a rule, for part of a program, or for an entire program.

(4) Any State rule, program or portion of a State rule or program for which approval is withdrawn is no longer Federally enforceable. The Federal rule, emission standard or requirement that would have been applicable in the absence of approval under this subpart will be the federally enforceable rule, emission standard or requirement.

(i) Upon withdrawal of approval, the Administrator will publish an expeditious schedule for sources subject to the previously approved State rule or program to come into compliance with applicable Federal requirements. Such schedule shall include interim emission limits where appropriate. During this transition, sources must be operated in a manner consistent with good air pollution control practices for minimizing emissions.

(ii) Upon withdrawal, the State shall reopen, under the provisions of § 70.7(f) of this chapter, the part 70 permit of each source subject to the previously approved rules or programs in order to assure compliance through the permit with the applicable requirements for each source.

(iii) If the Administrator withdraws approval of State rules applicable to sources that are not subject to part 70 permits, the applicable State rules are no longer Federally enforceable.

(iv) If the Administrator withdraws approval of a portion of a State rule or program, other approved portions of the State rule or program that are not withdrawn shall remain in effect.

(v) Any applicable Federal emission standard or requirement shall remain

enforceable by the EPA as specified in section 112(l)(7) of the Act.

(5) If a rule approved under § 63.93 is withdrawn under the provisions of § 63.96(b)(2) (i) or (ii), and, at the time of withdrawal, the Administrator finds the rule to be no less stringent than the otherwise applicable Federal requirement, the Administrator will grant equivalency to the previously approved State rule under the appropriate provisions of this part.

(6) A State may submit a new rule, program or portion of a rule or program for approval after the Administrator has withdrawn approval of the State's rule, program or portion of a rule or program. The Administrator will determine whether the new rule or program or portion of a rule or program is approvable according to the criteria and procedures of § 63.91 and either of § 63.92, § 63.93 or § 63.94.

(7) A State may voluntarily withdraw from an approved State rule, program or portion of a rule or program by notifying the EPA and all affected sources subject to the rule or program and providing notice and opportunity for comment to the public within the State.

(i) Upon voluntary withdrawal by a State, the Administrator will publish a timetable for sources subject to the previously approved State rule or program to come into compliance with applicable Federal requirements.

(ii) Upon voluntary withdrawal, the State must reopen and revise the part 70 permits of all sources affected by the withdrawal as provided for in this section and § 70.7(f), and the Federal rule, emission standard, or requirement that would have been applicable in the absence of approval under this subpart will become the applicable requirement for the source.

(iii) Any applicable Federal section 112 rule, emission standard or requirement shall remain enforceable by the EPA as specified in section 112(l)(7) of the Act.

(iv) Voluntary withdrawal shall not be effective sooner than 180 days after the State notifies the EPA of its intent to voluntarily withdraw.

§§ 63.97–63.98 [Reserved]

§ 63.99 Delegated Federal authorities.

(a) This section lists the specific source categories that have been delegated to the air pollution control agencies in each State under the procedures described in this subpart.

(1)–(4) [Reserved]

(5) California

(i) [Reserved]

(ii) Affected sources must comply with the *California Regulatory Requirements Applicable to the Air Toxics Program*, April 6, 1998 (incorporated by reference as specified in § 63.14) as described below.

(A) The material incorporated in Chapter 1 of the *California Regulatory Requirements Applicable to the Air Toxics Program* California Code of Regulations Title 17, section 93109) pertains to the perchloroethylene dry cleaning source category in the State of California, and has been approved under the procedures in § 63.93 to be implemented and enforced in place of subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, as it applies to area sources only, as defined in § 63.320(h).

(1) Authorities not delegated.

(i) California is not delegated the Administrator's authority to implement and enforce those provisions of subpart M which apply to major sources, as defined in § 63.320(g). Dry cleaning facilities which are major sources remain subject to subpart M.

(ii) California is not delegated the Administrator's authority of § 63.325 to determine equivalency of emissions control technologies. Any source seeking permission to use an alternative means of emission limitation, under sections 93109(a)(17), 93109(g)(3)(A)(5), 93109(g)(3)(B)(2)(iii), and 93109(h) of the California Airborne Toxic Control Measure, must also receive approval from the Administrator before using such alternative means of emission limitation for the purpose of complying with section 112.

(B) The material incorporated in Chapter 2 of the *California Regulatory Requirements Applicable to the Air Toxics Program* (San Luis Obispo County Air Pollution Control District Rule 432)

pertains to the perchloroethylene dry cleaning source category in the San Luis Obispo County Air Pollution Control District, and has been approved under the procedures in § 63.93 to be implemented and enforced in place of subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, as it applies to area sources only, as defined in § 63.320(h).

(1) Authorities not delegated.

(i) San Luis Obispo County Air Pollution Control District is not delegated the Administrator's authority to implement and enforce those provisions of subpart M which apply to major sources, as defined in § 63.320(g). Dry cleaning facilities which are major sources remain subject to subpart M.

(ii) San Luis Obispo County Air Pollution Control District is not delegated the Administrator's authority of § 63.325 to determine equivalency of emissions control technologies. Any source seeking permission to use an alternative means of emission limitation, under sections B.17, G.3.a.5, G.3.b.2.iii, and I of Rule 432, must also receive approval from the Administrator before using such alternative means of emission limitation for the purpose of complying with section 112.

(C) The material incorporated in Chapter 3 of the *California Regulatory Requirements Applicable to the Air Toxics Program* (South Coast Air Quality Management District Rule 1421) pertains to the perchloroethylene dry cleaning source category in the South Coast Air Quality Management District, and has been approved under the procedures in § 63.93 to be implemented and enforced in place of Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, as it applies to area sources only, as defined in § 63.320(h).

(1) Authorities not delegated.

(i) South Coast Air Quality Management District is not delegated the Administrator's authority to implement and enforce Rule 1421 in lieu of those provisions of Subpart M which apply to major sources, as defined in § 63.320(g). Dry cleaning facilities which are major sources remain subject to Subpart M.

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(ii) South Coast Air Quality Management District is not delegated the Administrator's authority of § 63.325 to determine equivalency of emissions control technologies. Any source seeking permission to use an alternative means of emission limitation, under sections (c)(17), (d)(3)(A)(v), (d)(4)(B)(ii)(III), and (j) of Rule 1421, must also receive approval from the Administrator before using such alternative means of emis-

sion limitation for the purpose of complying with section 112.

(6)–(27) [Reserved]

(28) Nevada.

(i) The following table lists the specific part 63 standards that have been delegated unchanged to the air pollution control agencies in the State of Nevada. The (X) symbol is used to indicate each category that has been delegated.

DELEGATION STATUS FOR PART 63 STANDARDS—NEVADA

Subpart	Description	NDEP ¹	WCDHD ²	CCHD ³
A	General Provisions	X	X	
M	Perchloroethylene Dry Cleaning	X	X	
N	Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks	X	X	
O	Ethylene Oxide Sterilization Facilities		X	
Q	Industrial Process Cooling Towers	X		
R	Gasoline Distribution Facilities		X	
T	Halogenated Solvent Cleaning	X	X	
JJ	Wood Furniture Manufacturing Operations	X		
KK	Printing and Publishing Industry	X	X	
OO	Tanks—Level 1	X		
PP	Containers	X		
QQ	Surface Impoundments	X		
RR	Individual Drain Systems	X		
VV	Oil-Water Separators and Organic-Water Separators	X		

¹ Nevada Department of Environmental Protection.

² Washoe County District Health Department.

³ Clark County Health Department.

(ii) [Reserved]

[61 FR 25399, May 21, 1996, as amended at 62 FR 65025, Dec. 10, 1997; 63 FR 26466, May 13, 1998; 63 FR 28909, May 27, 1998]

EFFECTIVE DATE NOTE: 1. At 63 FR 26466, May 13, 1998, § 63.99 was amended by revising paragraph (a)(5)(ii) introductory text and adding paragraph (a)(5)(ii)(C), effective July 13, 1998. For the convenience of the user, the superseded text is set forth as follows:

§ 63.99 Delegated Federal authorities.

* * * * *

(a) * * *

(5) * * *

(ii) Affected sources must comply with the *California Regulatory Requirements Applicable to the Air Toxics Program*, August 1, 1997 (incorporated by reference as specified in § 63.14) as described below.

* * * * *

2. At 63 FR 28909, May 27, 1998, § 63.99 was amended by adding and reserving paragraphs (a)(6) through (a)(27), and adding paragraph (a)(28), effective July 27, 1998.

Subpart F—National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

SOURCE: 59 FR 19454, Apr. 22, 1994, unless otherwise noted.

§ 63.100 Applicability and designation of source.

(a) This subpart provides applicability provisions, definitions, and other general provisions that are applicable to subparts G and H of this part.

(b) Except as provided in paragraphs (b)(4) and (c) of this section, the provisions of subparts F, G, and H of this part apply to chemical manufacturing process units that meet all the criteria specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section:

(1) Manufacture as a primary product one or more of the chemicals listed in paragraphs (b)(1)(i) or (b)(1)(ii) of this section.

(i) One or more of the chemicals listed in table 1 of this subpart; or

(ii) One or more of the chemicals listed in paragraphs (b)(1)(ii)(A) or (b)(1)(ii)(B) of this section:

(A) Tetrahydrobenzaldehyde (CAS Number 100–50–5); or

(B) Crotonaldehyde (CAS Number 123–73–9).

(2) Use as a reactant or manufacture as a product, or co-product, one or more of the organic hazardous air pollutants listed in table 2 of this subpart;

(3) Are located at a plant site that is a major source as defined in section 112(a) of the Act.

(4) The owner or operator of a chemical manufacturing processing unit is exempt from all requirements of subparts F, G, and H of this part until not later than April 22, 1997 if the owner or operator certifies, in a notification to the appropriate EPA Regional Office, not later than May 14, 1996, that the plant site at which the chemical manufacturing processing unit is located emits, and will continue to emit, during any 12-month period, less than 10 tons per year of any individual hazardous air pollutants (HAP), and less than 25 tons per year of any combination of HAP.

(i) If such a determination is based on limitations and conditions that are not federally enforceable (as defined in subpart A of this part), the owner or operator shall document the basis for the determination as specified in paragraphs (b)(4)(i)(A) through (b)(4)(i)(C) and comply with the recordkeeping requirement in 63.103(f).

(A) The owner or operator shall identify all HAP emission points at the plant site, including those emission points subject to and emission points not subject to subparts F, G, and H;

(B) The owner or operator shall calculate the amount of annual HAP emissions released from each emission point at the plant site, using acceptable measurement or estimating techniques for maximum expected operating conditions at the plant site. Examples of estimating procedures that are considered acceptable include the calculation procedures in § 63.150 of subpart G, the early reduction demonstration procedures specified in §§ 63.74 (c)(2), (c)(3), (d)(2), (d)(3), and (g), or accepted engineering practices. If the total annual HAP emissions for the

plant site are annually reported under Emergency Planning and Community Right-to-Know Act (EPCRA) section 313, then such reported annual emissions may be used to satisfy the requirements of § 63.100(b)(4)(i)(B).

(C) The owner or operator shall sum the amount of annual HAP emissions from all emission points on the plant site. If the total emissions of any one HAP are less than 10 tons per year and the total emissions of any combination of HAP are less than 25 tons per year, the plant site qualifies for the exemption described in paragraph (b)(4) of this section, provided that emissions are kept below these thresholds.

(ii) If such a determination is based on limitations and conditions that are federally enforceable (as defined in subpart A of this part), the owner or operator is not subject to the provisions of paragraph (b)(4) of this section.

(c) The owner or operator of a chemical manufacturing process unit that meets the criteria specified in paragraphs (b)(1) and (b)(3) of this section but does not use as a reactant or manufacture as a product or co-product, any organic hazardous air pollutant listed in table 2 of this subpart shall comply only with the requirements of § 63.103(e) of this subpart. To comply with this subpart, such chemical manufacturing process units shall not be required to comply with the provisions of subpart A of this part.

(d) The primary product of a chemical manufacturing process unit shall be determined according to the procedures specified in paragraphs (d)(1), (d)(2), (d)(3), and (d)(4) of this section.

(1) If a chemical manufacturing process unit produces more than one intended chemical product, the product with the greatest annual design capacity on a mass basis determines the primary product of the process.

(2) If a chemical manufacturing process unit has two or more products that have the same maximum annual design capacity on a mass basis and if one of those chemicals is listed in table 1 of this subpart, then the listed chemical is considered the primary product and the chemical manufacturing process unit is subject to this subpart. If more than one of the products is listed in table 1 of this subpart, then the owner

or operator may designate as the primary product any of the listed chemicals and the chemical manufacturing process unit is subject to this subpart.

(3) For chemical manufacturing process units that are designed and operated as flexible operation units producing one or more chemicals listed in table 1 of this subpart, the primary product shall be determined for existing sources based on the expected utilization for the five years following April 22, 1994 and for new sources based on the expected utilization for the first five years after initial start-up.

(i) If the predominant use of the flexible operation unit, as described in paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section, is to produce one or more chemicals listed in table 1 of this subpart, then the flexible operation unit shall be subject to the provisions of subparts F, G, and H of this part.

(A) If the flexible operation unit produces one product for the greatest annual operating time, then that product shall represent the primary product of the flexible operation unit.

(B) If the flexible operation unit produces multiple chemicals equally based on operating time, then the product with the greatest annual production on a mass basis shall represent the primary product of the flexible operation unit.

(ii) The determination of applicability of this subpart to chemical manufacturing process units that are designed and operated as flexible operation units shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.

(4) Notwithstanding the provisions of paragraph (d)(3) of this section, for chemical manufacturing process units that are designed and operated as flexible operation units producing a chemical listed in paragraph (b)(1)(ii) of this section, the primary product shall be determined for existing sources based on the expected utilization for the five years following May 12, 1998 and for new sources based on the expected utilization for the first five years after initial start-up.

(i) The predominant use of the flexible operation unit shall be determined according to paragraphs (d)(3)(i)(A) and

(d)(3)(i)(B) of this section. If the predominant use is to produce one of the chemicals listed in paragraph (b)(1)(ii) of this section, then the flexible operation unit shall be subject to the provisions of this subpart and subparts G and H of this part.

(ii) The determination of applicability of this subpart to chemical manufacturing process units that are designed and operated as flexible operation units shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.

(e) The source to which this subpart applies is the collection of the process vents; storage vessels; transfer racks; waste management units; maintenance wastewater; heat exchange systems; equipment identified in §63.149 of subpart G; and pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers that are associated with the collection of all chemical manufacturing process units at a major source that meet the criteria specified in paragraphs (b)(1) through (b)(3) of this section. The source also includes equipment required by, or utilized as a method of compliance with this subpart F, subpart G or H of this part which may include control devices and recovery devices.

(1) This subpart applies to maintenance wastewater and heat exchange systems within a source that is subject to this subpart.

(2) This subpart F and subpart G of this part apply to process vents, storage vessels, transfer racks, equipment identified in §63.149 of subpart G of this part, and wastewater streams and associated treatment residuals within a source that is subject to this subpart.

(3) This subpart F and subpart H of this part apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers within a source that is subject to this subpart. If specific items of equipment, comprising part of a chemical manufacturing

process unit subject to this subpart, are managed by different administrative organizations (e.g., different companies, affiliates, departments, divisions, etc.), those items of equipment may be aggregated with any chemical manufacturing process unit within the source for all purposes under subpart H of this part, providing there is no delay in the applicable compliance date in § 63.100(k).

(f) The source includes the emission points listed in paragraphs (f)(1) through (f)(11) of this section, but those emission points are not subject to the requirements of this subpart F and subparts G and H of this part. This subpart does not require emission points that are listed in paragraphs (f)(1) through (f)(11) of this section to comply with the provisions of subpart A of this part.

(1) Equipment that is located within a chemical manufacturing process unit that is subject to this subpart but the equipment does not contain organic hazardous air pollutants.

(2) Stormwater from segregated sewers;

(3) Water from fire-fighting and deluge systems in segregated sewers;

(4) Spills;

(5) Water from safety showers;

(6) Water from testing of deluge systems;

(7) Water from testing of firefighting systems;

(8) Vessels storing organic liquids that contain organic hazardous air pollutants only as impurities;

(9) Loading racks, loading arms, or loading hoses that only transfer liquids containing organic hazardous air pollutants as impurities;

(10) Loading racks, loading arms, or loading hoses that vapor balance during all loading operations; and

(11) Equipment that is intended to operate in organic hazardous air pollutant service, as defined in § 63.161 of subpart H of this part, for less than 300 hours during the calendar year.

(g) The owner or operator shall follow the procedures specified in paragraphs (g)(1) through (g)(4) of this section to determine whether a storage vessel is part of the source to which this subpart applies.

(1) Where a storage vessel is dedicated to a chemical manufacturing process unit, the storage vessel shall be considered part of that chemical manufacturing process unit.

(i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the storage vessel is part of the source to which this subpart applies.

(ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the storage vessel is not part of the source to which this subpart applies.

(2) If a storage vessel is not dedicated to a single chemical manufacturing process unit, then the applicability of this subpart F and subpart G of this part shall be determined according to the provisions in paragraphs (g)(2)(i) through (g)(2)(iii) of this section.

(i) If a storage vessel is shared among chemical manufacturing process units and one of the process units has the predominant use, as determined by paragraph (g)(2)(i)(A) and (g)(2)(i)(B) of this section, then the storage vessel is part of that chemical manufacturing process unit.

(A) If the greatest input into the storage vessel is from a chemical manufacturing process unit that is located on the same plant site, then that chemical manufacturing process unit has the predominant use.

(B) If the greatest input into the storage vessel is provided from a chemical manufacturing process unit that is not located on the same plant site, then the predominant use is the chemical manufacturing process unit on the same plant site that receives the greatest amount of material from the storage vessel.

(ii) If a storage vessel is shared among chemical manufacturing process units so that there is no single predominant use, and at least one of those chemical manufacturing process units is subject to this subpart, the storage vessel shall be considered to be part of the chemical manufacturing process unit that is subject to this subpart. If more than one chemical manufacturing process unit is subject to this subpart, the owner or operator may assign the

storage vessel to any of the chemical manufacturing process units subject to this subpart.

(iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (g)(2)(iii)(A) and (g)(2)(iii)(B) of this section, as applicable. This determination shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.

(A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding April 22, 1994.

(B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding May 12, 1998.

(iv) If there is a change in the material stored in the storage vessel, the owner or operator shall reevaluate the applicability of this subpart to the vessel.

(3) Where a storage vessel is located at a major source that includes one or more chemical manufacturing process units which place material into, or receive materials from the storage vessel, but the storage vessel is located in a tank farm (including a marine tank farm), the applicability of this subpart F and subpart G of this part shall be determined according to the provisions in paragraphs (g)(3)(i) through (g)(3)(iv) of this section.

(i) The storage vessel may only be assigned to a chemical manufacturing process unit that utilizes the storage vessel and does not have an intervening storage vessel for that product (or raw material, as appropriate). With respect to any chemical manufacturing process unit, an intervening storage vessel means a storage vessel connected by hard-piping to the chemical manufacturing process unit and to the storage vessel in the tank farm so that product

or raw material entering or leaving the chemical manufacturing process unit flows into (or from) the intervening storage vessel and does not flow directly into (or from) the storage vessel in the tank farm.

(ii) If there is no chemical manufacturing process unit at the major source that meets the criteria of paragraph (g)(3)(i) of this section with respect to a storage vessel, this subpart F and subpart G of this part do not apply to the storage vessel.

(iii) If there is only one chemical manufacturing process unit at the major source that meets the criteria of paragraph (g)(3)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to that chemical manufacturing process unit. Applicability of this subpart F and subpart G to this part to the storage vessel shall then be determined according to the provisions of paragraph (b) of this section.

(iv) If there are two or more chemical manufacturing process units at the major source that meet the criteria of paragraph (g)(3)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to one of those chemical manufacturing process units according to the provisions of paragraph (g)(2) of this section. The predominant use shall be determined among only those chemical manufacturing process units that meet the criteria of paragraph (g)(3)(i) of this section. Applicability of this subpart F and subpart G of this part to the storage vessel shall then be determined according to the provisions of paragraph (b) of this section.

(4) If the storage vessel begins receiving material from (or sending material to) another chemical manufacturing process unit, or ceasing to receive material from (or send material to) a chemical manufacturing process unit, or if the applicability of this subpart F and subpart G of this part to a storage vessel has been determined according to the provisions of paragraphs (g)(2)(i) through (g)(2)(iii) of this section and there is a change so that the predominant use may reasonably have changed, the owner or operator shall reevaluate the applicability of this subpart to the storage vessel.

(h) The owner or operator shall follow the procedures specified in paragraphs (h)(1) and (h)(2) of this section to determine whether the arms and hoses in a loading rack are part of the source to which this subpart applies.

(1) Where a loading rack is dedicated to a chemical manufacturing process unit, the loading rack shall be considered part of that specific chemical manufacturing process unit.

(i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section and the loading rack does not meet the criteria specified in paragraphs (f)(9) and (f)(10) of this section, then the loading rack is considered a transfer rack (as defined in §63.101 of this subpart) and is part of the source to which this subpart applies.

(ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading rack is not considered a transfer rack (as defined in §63.101 of this subpart) and is not a part of the source to which this subpart applies.

(2) If a loading rack is shared among chemical manufacturing process units, then the applicability of this subpart F and subpart G of this part shall be determined at each loading arm or loading hose according to the provisions in paragraphs (h)(2)(i) through (h)(2)(iv) of this section.

(i) Each loading arm or loading hose that is dedicated to the transfer of liquid organic hazardous air pollutants listed in table 2 of this subpart from a chemical manufacturing process unit to which this subpart applies is part of that chemical manufacturing process unit and is part of the source to which this subpart applies unless the loading arm or loading hose meets the criteria specified in paragraphs (f)(9) or (f)(10) of this section.

(ii) If a loading arm or loading hose is shared among chemical manufacturing process units, and one of the chemical manufacturing process units provides the greatest amount of the material that is loaded by the loading arm or loading hose, then the loading arm or loading hose is part of that chemical manufacturing process unit.

(A) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading arm or loading hose is part of the source to which this subpart applies unless the loading arm or loading hose meets the criteria specified in paragraphs (f)(9) or (f)(10) of this section.

(B) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading arm or loading hose is not part of the source to which this subpart applies.

(iii) If a loading arm or loading hose is shared among chemical manufacturing process units so that there is no single predominant use as described in paragraph (h)(2)(ii) of this section and at least one of those chemical manufacturing process units is subject to this subpart, then the loading arm or hose is part of the chemical manufacturing process unit that is subject to this subpart. If more than one of the chemical manufacturing process units is subject to this subpart, the owner or operator may assign the loading arm or loading hose to any of the chemical manufacturing process units subject to this subpart.

(iv) If the predominant use of a loading arm or loading hose varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (h)(2)(iv)(A) and (h)(2)(iv)(B) of this section, as applicable. This determination shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.

(A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding April 22, 1994.

(B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall

be based on the utilization that occurred during the year preceding May 12, 1998.

(3) If a loading rack that was dedicated to a single chemical manufacturing process unit begins to serve another chemical manufacturing process unit, or if applicability was determined under the provisions of paragraphs (h)(2)(i) through (h)(2)(iv) of this section and there is a change so that the predominant use may reasonably have changed, the owner or operator shall reevaluate the applicability of this subpart to the loading rack, loading arm, or loading hose.

(i) Except as provided in paragraph (i)(4) of this section, the owner or operator shall follow the procedures specified in paragraphs (i)(1) through (i)(3) and (i)(5) of this section to determine whether the vent(s) from a distillation unit is part of the source to which this subpart applies.

(1) Where a distillation unit is dedicated to a chemical manufacturing process unit, the distillation column shall be considered part of that chemical manufacturing process unit.

(i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the distillation unit is part of the source to which this subpart applies.

(ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the distillation unit is not part of the source to which this subpart applies.

(2) If a distillation unit is not dedicated to a single chemical manufacturing process unit, then the applicability of this subpart and subpart G of this part shall be determined according to the provisions in paragraphs (i)(2)(i) through (i)(2)(iv) of this section.

(i) If the greatest input to the distillation unit is from a chemical manufacturing process unit located on the same plant site, then the distillation unit shall be assigned to that chemical manufacturing process unit.

(ii) If the greatest input to the distillation unit is provided from a chemical manufacturing process unit that is not located on the same plant site, then the distillation unit shall be as-

signed to the chemical manufacturing process unit located at the same plant site that receives the greatest amount of material from the distillation unit.

(iii) If a distillation unit is shared among chemical manufacturing process units so that there is no single predominant use as described in paragraphs (i)(2)(i) and (i)(2)(ii) of this section, and at least one of those chemical manufacturing process units is subject to this subpart, the distillation unit shall be assigned to the chemical manufacturing process unit that is subject to this subpart. If more than one chemical manufacturing process unit is subject to this subpart, the owner or operator may assign the distillation unit to any of the chemical manufacturing process units subject to this subpart.

(iv) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (i)(2)(iv)(A) and (i)(2)(iv)(B), as applicable. This determination shall be included as part of an operating permit application or as otherwise specified by the permitting authority.

(A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding April 22, 1994.

(B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding May 12, 1998.

(3) If the chemical manufacturing process unit to which the distillation unit is assigned is subject to this subpart, then each vent from the individual distillation unit shall be considered separately to determine whether it is a process vent (as defined in § 63.101 of this subpart). Each vent that is a process vent is part of the source to which this subpart applies.

(4) If the distillation unit is part of one of the chemical manufacturing

process units listed in paragraphs (i)(4)(i) through (i)(4)(iii) of this section, then each vent from the individual distillation unit shall be considered separately to determine whether it is a process vent (as defined in §63.101 of this subpart). Each vent that is a process vent is part of the source to which this subpart applies:

(i) The Aromex unit that produces benzene, toluene, and xylene;

(ii) The unit that produces hexane; or

(iii) The unit that produces cyclohexane.

(5) If a distillation unit that was dedicated to a single chemical manufacturing process unit, or that was part of a chemical manufacturing unit identified in paragraphs (i)(4)(i) through (i)(4)(iii) of this section, begins to serve another chemical manufacturing process unit, or if applicability was determined under the provisions of paragraphs (i)(2)(i) through (i)(2)(iv) of this section and there is a change so that the predominant use may reasonably have changed, the owner or operator shall reevaluate the applicability of this subpart to the distillation unit.

(j) The provisions of subparts F, G, and H of this part do not apply to the processes specified in paragraphs (j)(1) through (j)(6) of this section. Subparts F, G, and H do not require processes specified in paragraphs (j)(1) through (j)(6) to comply with the provisions of subpart A of this part.

(1) Research and development facilities, regardless of whether the facilities are located at the same plant site as a chemical manufacturing process unit that is subject to the provisions of subparts F, G, or H of this part.

(2) Petroleum refining process units, regardless of whether the units supply feedstocks that include chemicals listed in table 1 of this subpart to chemical manufacturing process units that are subject to the provisions of subparts F, G, or H of this part.

(3) Ethylene process units, regardless of whether the units supply feedstocks that include chemicals listed in table 1 of this subpart to chemical manufacturing process units that are subject to the provisions of subpart F, G, or H of this part.

(4) Process vents from batch operations within a chemical manufacturing process unit;

(5) Chemical manufacturing process units that are located in coke by-product recovery plants.

(6) Solvent reclamation, recovery, or recycling operations at hazardous waste TSDF facilities requiring a permit under 40 CFR part 270 that are separate entities and not part of a SOCM chemical manufacturing process unit.

(k) Except as provided in paragraphs (l), (m), and (p) of this section, sources subject to subparts F, G, or H of this part are required to achieve compliance on or before the dates specified in paragraphs (k)(1) through (k)(8) of this section.

(1)(i) New sources that commence construction or reconstruction after December 31, 1992, but before August 27, 1996 shall be in compliance with this subpart F, subparts G and H of this part upon initial start-up or by April 22, 1994, whichever is later, as provided in §63.6(b) of subpart A of this part, and further, where start-up occurs before January 17, 1997 shall also be in compliance with this subpart F and subparts G and H of this part (as amended on January 17, 1997) by January 17, 1997, except that, with respect to all new sources that commenced construction or reconstruction after December 31, 1992, and before August 27, 1996:

(A) Heat exchange systems and maintenance wastewater, that are part of a new source on which construction or reconstruction commenced after December 31, 1992, but before August 27, 1996, shall be in compliance with this subpart F no later than initial start-up or 180 days after January 17, 1997, whichever is later;

(B) Process wastewater streams and equipment subject to §63.149, that are part of a new source on which construction or reconstruction commenced after December 31, 1992, but before August 27, 1996, shall be in compliance with this subpart F and subpart G of this part no later than initial start-up or 180 days after January 17, 1997, whichever is later; and

(ii) New sources that commence construction after August 26, 1996 shall be in compliance with this subpart F, subparts G and H of this part upon initial

start-up or by January 17, 1997, whichever is later.

(2) Existing sources shall be in compliance with this subpart F and subpart G of this part no later than the dates specified in paragraphs (k)(2)(i) and (k)(2)(ii) of this section, unless an extension has been granted by the Administrator as provided in §63.151(a)(6) of subpart G of this part or granted by the permitting authority as provided in §63.6(i) of subpart A of this part.

(i) Process vents, storage vessels, and transfer racks at an existing source shall be in compliance with the applicable sections of this subpart and subpart G of this part no later than April 22, 1997.

(ii) Heat exchange systems and maintenance wastewater shall be in compliance with the applicable sections of this subpart, and equipment subject to §63.149 and process wastewater streams shall be in compliance with the applicable sections of this subpart and subpart G of this part no later than April 22, 1999, except as provided in paragraphs (k)(2)(ii)(A) and (k)(2)(ii)(B) of this section.

(A) If a process wastewater stream or equipment subject to §63.149 is subject to the control requirements of subpart G of this part due to the contribution of nitrobenzene to the total annual average concentration (as determined according to the procedures in §63.144(b) of subpart G of this part), the wastewater stream shall be in compliance no later than January 18, 2000.

(B) If a process wastewater stream is used to generate credits in an emissions average in accordance with §63.150 of subpart G of this part, the process wastewater stream shall be in compliance with the applicable sections of subpart G of this part no later than April 22, 1997.

(3) Existing sources shall be in compliance with subpart H of this part no later than the dates specified in paragraphs (k)(3)(i) through (k)(3)(v) of this section, except as provided for in paragraphs (k)(4) through (k)(8) of this section, unless an extension has been granted by the Administrator as provided in §63.182(a)(6) of this part or granted by the permitting authority as provided in §63.6(i) of subpart A of this part. The group designation for each

process unit is indicated in table 1 of this subpart.

(i) Group I: October 24, 1994.

(ii) Group II: January 23, 1995.

(iii) Group III: April 24, 1995.

(iv) Group IV: July 24, 1995.

(v) Group V: October 23, 1995.

(4) Existing chemical manufacturing process units in Groups I and II as identified in table 1 of this subpart shall be in compliance with the requirements of §63.164 of subpart H no later than May 10, 1995, for any compressor meeting one or more of the criteria in paragraphs (k)(4)(i) through (k)(4)(iv) of this section, if the work can be accomplished without a process unit shutdown, as defined in §63.161 in subpart H.

(i) The seal system will be replaced;

(ii) A barrier fluid system will be installed;

(iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system; or

(iv) The compressor must be modified to permit connecting the compressor to a closed vent system.

(5) Existing chemical manufacturing process units shall be in compliance with the requirements of §63.164 in subpart H no later than 1 year after the applicable compliance date specified in paragraph (k)(3) of this section, for any compressor meeting the criteria in paragraphs (k)(5)(i) through (k)(5)(iv) of this section.

(i) The compressor meets one or more of the criteria specified in paragraphs (k)(4)(i) through (iv) of this section;

(ii) The work can be accomplished without a process unit shutdown as defined in §63.161 of subpart H;

(iii) The additional time is actually necessary due to the unavailability of parts beyond the control of the owner or operator; and

(iv) The owner or operator submits a request to the appropriate EPA Regional Office at the addresses listed in §63.13 of subpart A of this part no later than 45 days before the applicable compliance date in paragraph (k)(3) of this section, but in no event earlier than May 10, 1995. The request shall include the information specified in paragraphs (k)(5)(iv)(A) through (k)(5)(iv)(E) of this section. Unless the EPA Regional Office objects to the request within 30

days after receipt, the request shall be deemed approved.

(A) The name and address of the owner or operator and the address of the existing source if it differs from the address of the owner or operator;

(B) The name, address, and telephone number of a contact person for further information;

(C) An identification of the chemical manufacturing process unit, and of the specific equipment for which additional compliance time is required;

(D) The reason compliance can not reasonably be achieved by the applicable date specified in paragraphs (k)(3)(i) through (k)(3)(v) of this section; and

(E) The date by which the owner or operator expects to achieve compliance.

(6)(i) If compliance with the compressor provisions of § 63.164 of subpart H of this part can not reasonably be achieved without a process unit shutdown, as defined in § 63.161 of subpart H, the owner or operator shall achieve compliance no later than April 22, 1996, except as provided for in paragraph (k)(6)(ii) of this section. The owner or operator who elects to use this provision shall comply with the requirements of § 63.103(g) of this subpart.

(ii) If compliance with the compressor provisions of § 63.164 of subpart H of this part can not be achieved without replacing the compressor or recasting the distance piece, the owner or operator shall achieve compliance no later than April 22, 1997. The owner or operator who elects to use this provision shall also comply with the requirements of § 63.103(g) of this subpart.

(7) Existing sources shall be in compliance with the provisions of § 63.170 of subpart H no later than April 22, 1997.

(8) If an owner or operator of a chemical manufacturing process unit subject to the provisions of subparts F, G, and H of part 63 plans to implement pollution prevention measures to eliminate the use or production of HAP listed in table 2 of this subpart by October 23, 1995, the provisions of subpart H do not apply regardless of the compliance dates specified in paragraph (k)(3) of this section. The owner or operator who elects to use this provision

shall comply with the requirements of § 63.103(h) of this subpart.

(9) All terms in this subpart F or subpart G of this part that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), unless specified otherwise in the section or subsection that imposes the requirement, refer to the standard calendar periods.

(i) Notwithstanding time periods specified in this subpart F or subpart G of this part for completion of required tasks, such time periods may be changed by mutual agreement between the owner or operator and the Administrator, as specified in subpart A of this part (e.g., a period could begin on the compliance date or another date, rather than on the first day of the standard calendar period). For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.

(ii) Where the period specified for compliance is a standard calendar period, if the initial compliance date occurs after the beginning of the period, compliance shall be required according to the schedule specified in paragraphs (k)(9)(ii)(A) or (k)(9)(ii)(B) of this section, as appropriate.

(A) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs, if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or

(B) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.

(iii) In all instances where a provision of this subpart F or subpart G of this part requires completion of a task during each of multiple successive periods, an owner or operator may perform the required task at any time during the specified period, provided the task is conducted at a reasonable interval after completion of the task during the previous period.

(l)(1) If an additional chemical manufacturing process unit meeting the criteria specified in paragraph (b) of this section is added to a plant site that is a major source as defined in section 112(a) of the Act, the addition shall be subject to the requirements for a new source in subparts F, G, and H of this part if:

(i) It is an addition that meets the definition of construction in § 63.2 of subpart A of this part;

(ii)(A) Such construction commenced after December 31, 1992 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in table 1 of this subpart;

(B) Such construction commenced after August 22, 1997 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section; and

(iii) The addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP's, unless the Administrator establishes a lesser quantity.

(2) If any change is made to a chemical manufacturing process unit subject to this subpart, the change shall be subject to the requirements of a new source in subparts F, G, and H of this part if:

(i) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part; and

(ii)(A) Such reconstruction commenced after December 31, 1992 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in table 1 of this subpart; and

(B) Such construction commenced after August 22, 1997 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section.

(3) If an additional chemical manufacturing process unit is added to a plant site or a change is made to a chemical manufacturing process unit and the addition or change is determined to be subject to the new source requirements according to paragraph (l)(1) or (l)(2) of this section:

(i) The new or reconstructed source shall be in compliance with the new source requirements of subparts F, G, and H of this part upon initial start-up of the new or reconstructed source or by April 22, 1994, whichever is later; and

(ii) The owner or operator of the new or reconstructed source shall comply with the reporting and recordkeeping requirements in subparts F, G, and H of this part that are applicable to new sources. The applicable reports include, but are not limited to:

(A) The application for approval of construction or reconstruction which shall be submitted by the date specified in § 63.151(b)(2)(ii) of subpart G of this part, or an Initial Notification as specified in § 63.151(b)(2)(iii) of subpart G of this part;

(B) Changes that meet the criteria in § 63.151(j) of subpart G of this part, unless the information has been submitted in an operating permit application or amendment;

(C) The Notification of Compliance Status as required by § 63.152(b) of subpart G of this part for the new or reconstructed source;

(D) Periodic Reports and Other Reports as required by § 63.152(c) and (d) of subpart G of this part;

(E) Reports required by § 63.182 of subpart H of this part; and

(F) Reports and notifications required by sections of subpart A of this part that are applicable to subparts F, G, and H of this part, as identified in table 3 of this subpart.

(4) If an additional chemical manufacturing process unit is added to a plant site, or if an emission point is added to an existing chemical manufacturing process unit, or if another deliberate operational process change creating an additional Group 1 emission point(s) is made to an existing chemical manufacturing process unit, or if a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, and if the addition or change is not subject to the new source requirements as determined according to paragraph (l)(1) or (l)(2) of this section, the requirements in paragraphs (l)(4)(i) through (l)(4)(iii) of this section shall apply. Examples of

process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph and paragraph (m) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status required by § 63.152(b) of subpart G of this part.

(i) The added emission point(s) and any emission point(s) within the added or changed chemical manufacturing process unit are subject to the requirements of subparts F, G, and H of this part for an existing source;

(ii) The added emission point(s) and any emission point(s) within the added or changed chemical manufacturing process unit shall be in compliance with subparts F, G, and H of this part by the dates specified in paragraph (l)(4)(ii) (A) or (B) of this section, as applicable.

(A) If a chemical manufacturing process unit is added to a plant site or an emission point(s) is added to an existing chemical manufacturing process unit, the added emission point(s) shall be in compliance upon initial start-up of the added chemical manufacturing process unit or emission point(s) or by 3 years after April 22, 1994, whichever is later.

(B) If a deliberate operational process change to an existing chemical manufacturing process unit causes a Group 2 emission point to become a Group 1 emission point, if a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, the owner or operator shall be in compliance upon initial start-up or by 3 years after April 22, 1994, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (m)(1) through (m)(3) of this section to establish a compliance date.

(iii) The owner or operator of a chemical manufacturing process unit or emission point that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements of subparts F, G, and H of this part that are applicable to existing sources, including, but not limited to, the reports listed in paragraphs (l)(4)(iii) (A) through (E) of this section. A change to an existing chemical manufacturing process unit shall be subject to the reporting requirements for existing sources, including but not limited to, the reports listed in paragraphs (l)(4)(iii)(A) through (E) of this section if the change meets the criteria specified in § 63.118(g), (h), (i), or (j) of subpart G of this part for process vents or the criteria in § 63.155(i) or (j) of subpart G of this part. The applicable reports include, but are not limited to:

(A) Reports specified in § 63.151(i) and (j) of subpart G of this part, unless the information has been submitted in an operating permit application or amendment;

(B) The Notification of Compliance Status as required by § 63.152(b) of subpart G of this part for the emission points that were added or changed;

(C) Periodic Reports and other reports as required by § 63.152 (c) and (d) of subpart G of this part;

(D) Reports required by § 63.182 of subpart H of this part; and

(E) Reports and notifications required by sections of subpart A of this part that are applicable to subparts F, G, and H of this part, as identified in table 3 of this subpart.

(m) If a change that does not meet the criteria in paragraph (l)(4) of this section is made to a chemical manufacturing process unit subject to subparts F and G of this part, and the change causes a Group 2 emission point to become a Group 1 emission point (as defined in § 63.111 of subpart G of this part), then the owner or operator shall comply with the requirements of subpart G of this part for the Group 1 emission point as expeditiously as practicable, but in no event later than 3 years after the emission point becomes Group 1.

(1) The owner or operator shall submit to the Administrator for approval

a compliance schedule, along with a justification for the schedule.

(2) The compliance schedule shall be submitted with the report required in § 63.151(i)(2) of subpart G of this part for emission points included in an emissions average or § 63.151(j)(1) or subpart G of this part for emission points not in an emissions average, unless the compliance schedule has been submitted in an operating permit application or amendment.

(3) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

(n) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of subpart F is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart F.

(o) *Sections stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of §§ 63.164 and 63.170 of subpart H is stayed from October 28, 1994, to April 24, 1995, only as applied to those sources subject to § 63.100(k)(3) (i) and (ii).

(p) *Compliance dates for chemical manufacturing process units that produce crotonaldehyde or tetrahydrobenzaldehyde.* Notwithstanding the provisions of paragraph (k) of this section, chemical manufacturing process units that meet the criteria in paragraphs (b)(1)(ii), (b)(2), and (b)(3) of this section shall be in compliance with this subpart and subparts G and H of this part by the dates specified in paragraphs (p)(1) and (p)(2) of this section, as applicable.

(1) If the source consists only of chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section, new sources shall comply by the date specified in paragraph (p)(1)(i) of this section and existing sources shall comply

by the dates specified in paragraphs (p)(1)(ii) and (p)(1)(iii) of this section.

(i) Upon initial start-up or May 12, 1998, whichever is later.

(ii) This subpart and subpart G of this part by May 14, 2001, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. When April 22, 1994 is referred to in this subpart and subpart G of this part, May 12, 1998 shall be used as the applicable date for that provision. When December 31, 1992 is referred to in this subpart and subpart G of this part, August 22, 1997 shall be used as the applicable date for that provision.

(iii) Subpart H of this part by May 12, 1999, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. When April 22, 1994 is referred to in subpart H of this part, May 12, 1998 shall be used as the applicable date for that provision. When December 31, 1992 is referred to in subpart H of this part, August 22, 1997 shall be used as the applicable date for that provision.

(2) If the source consists of a combination of chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraphs (b)(1)(i) and (b)(1)(ii) of this section, new chemical manufacturing process units that meet the criteria in paragraph (b)(1)(ii) of this section shall comply by the date specified in paragraph (p)(1)(i) of this section and existing chemical manufacturing process units producing crotonaldehyde and/or tetrahydrobenzaldehyde shall comply by the dates specified in paragraphs (p)(1)(ii) and (p)(1)(iii) of this section.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 53360, Oct. 24, 1994; 59 FR 54132, Oct. 28, 1994; 60 FR 5321, Jan. 27, 1995; 60 FR 18023, 18028, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995; 61 FR 7718, Feb. 29, 1996; 61 FR 64574, Dec. 5, 1996; 62 FR 2729, Jan. 17, 1997; 63 FR 26081, May 12, 1998]

§ 63.101 Definitions.

(a) The following terms as used in subparts F, G, and H of this part shall

have the meaning given them in subpart A of this part: Act, actual emissions, Administrator, affected source, approved permit program, commenced, compliance date, construction, continuous monitoring system, continuous parameter monitoring system, effective date, emission standard, emissions averaging, EPA, equivalent emission limitation, existing source, Federally enforceable, fixed capital cost, hazardous air pollutant, lesser quantity, major source, malfunction, new source, owner or operator, performance evaluation, performance test, permit program, permitting authority, reconstruction, relevant standard, responsible official, run, standard conditions, State, and stationary source.

(b) All other terms used in this subpart and subparts G and H of this part shall have the meaning given them in the Act and in this section. If the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section for purposes of subparts F, G, and H of this part.

Air oxidation reactor means a device or vessel in which air, or a combination of air and oxygen, is used as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds. Air oxidation reactor includes the product separator and any associated vacuum pump or steam jet.

Batch operation means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a unit operation within a chemical manufacturing process unit and processed at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

Bottoms receiver means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

By-product means a chemical that is produced coincidentally during the production of another chemical.

Chemical manufacturing process unit means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. A chemical manufacturing process unit consists of more than one unit operation. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product.

Control device means any combustion device, recovery device, or recapture device. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents (as defined in this section), recapture devices are considered control devices but recovery devices are not considered control devices. For a steam stripper, a primary condenser is not considered a control device.

Co-product means a chemical that is produced during the production of another chemical.

Distillate receiver means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

Distillation unit means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they

approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

Emission point means an individual process vent, storage vessel, transfer rack, wastewater stream, or equipment leak.

Equipment leak means emissions of organic hazardous air pollutants from a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, surge control vessel, bottoms receiver, or instrumentation system in organic hazardous air pollutant service as defined in § 63.161 of subpart H of this part.

Ethylene process or *ethylene process unit* means a chemical manufacturing process unit in which ethylene and/or propylene are produced by separation from petroleum refining process streams or by subjecting hydrocarbons to high temperatures in the presence of steam. The ethylene process unit includes the separation of ethylene and/or propylene from associated streams such as a C₄ product, pyrolysis gasoline, and pyrolysis fuel oil. The ethylene process does not include the manufacture of SOCM chemicals such as the production of butadiene from the C₄ stream and aromatics from pyrolysis gasoline.

Flexible operation unit means a chemical manufacturing process unit that manufactures different chemical products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in in-process combustion equipment such as furnaces and gas turbines either singly or in combination.

Heat exchange system means any cooling tower system or once-through cooling water system (e.g., river or pond

water). A heat exchange system can include more than one heat exchanger and can include an entire recirculating or once-through cooling system.

Impurity means a substance that is produced coincidentally with the primary product, or is present in a raw material. An impurity does not serve a useful purpose in the production or use of the primary product and is not isolated.

Initial start-up means the first time a new or reconstructed source begins production, or, for equipment added or changed as described in § 63.100 (l) or (m) of this subpart, the first time the equipment is put into operation. Initial start-up does not include operation solely for testing equipment. For purposes of subpart G of this part, initial start-up does not include subsequent start-ups (as defined in this section) of chemical manufacturing process units following malfunctions or shutdowns or following changes in product for flexible operation units or following recharging of equipment in batch operation. For purposes of subpart H of this part, initial start-up does not include subsequent start-ups (as defined in § 63.161 of subpart H of this part) of process units (as defined in § 63.161 of subpart H of this part) following malfunctions or process unit shutdowns.

Loading rack means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

Maintenance wastewater means wastewater generated by the draining of process fluid from components in the chemical manufacturing process unit into an individual drain system prior to or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewaters include descaling of heat exchanger tubing bundles, cleaning of distillation column traps, draining of low legs and high point bleeds, draining of pumps into an individual drain system, and draining of portions

of the chemical manufacturing process unit for repair.

On-site or On site means, with respect to records required to be maintained by this subpart, that the records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the chemical manufacturing process unit to which the records pertain, or storage in central files elsewhere at the major source.

Operating permit means a permit required by 40 CFR part 70 or 71.

Organic hazardous air pollutant or organic HAP means one of the chemicals listed in table 2 of this subpart.

Petroleum refining process, also referred to as a *petroleum refining process unit*, means a process that for the purpose of producing transportation fuels (such as gasoline and diesel fuels), heating fuels (such as fuel gas, distillate, and residual fuel oils), or lubricants separates petroleum or separates, cracks, or reforms unfinished derivatives. Examples of such units include, but are not limited to, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, and thermal processes.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Process vent means a gas stream containing greater than 0.005 weight-percent total organic hazardous air pollutants that is continuously discharged during operation of the unit from an air oxidation reactor, other reactor, or distillation unit (as defined in this section) within a chemical manufacturing process unit that meets all applicability criteria specified in § 63.100 (b)(1) through (b)(3) of this subpart. Process vents are gas streams that are discharged to the atmosphere (with or without passing through a control device) either directly or after passing through one or more recovery devices. Process vents exclude relief valve dis-

charges, gaseous streams routed to a fuel gas system(s), and leaks from equipment regulated under subpart H of this part.

Process wastewater means wastewater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

Product means a compound or chemical which is manufactured as the intended product of the chemical manufacturing process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Product separator means phase separators, flash drums, knock-out drums, decanters, degassers, and condenser(s) including ejector-condenser(s) associated with a reactor or an air oxidation reactor.

Reactor means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed. Reactor includes the product separator and any associated vacuum pump or steam jet.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. For example, a recapture device may recover chemicals primarily for disposal. Recapture devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse.

Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of subpart G of this part, recapture devices are considered recovery devices.

Research and development facility means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a *de minimis* manner.

Shutdown means for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair, the cessation of operation of a chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit, waste management unit, equipment required or used to comply with this subpart F, subparts G, or H of this part or the emptying and degassing of a storage vessel. Shutdown does not include the routine rinsing or washing of equipment in batch operation between batches.

Source means the collection of emission points to which this subpart applies as determined by the criteria in § 63.100 of this subpart. For purposes of subparts F, G, and H of this part, the term *affected source* as used in subpart A of this part has the same meaning as the term *source* defined here.

Start-up means the setting into operation of a chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit, waste management unit, or equipment required or used to comply with this subpart F, subpart G, or H of this part or a storage vessel after emptying and degassing. Start-up includes initial start-up, operation solely for testing equipment, the recharging of equipment in batch operation, and transitional conditions due to changes in product for flexible operation units.

Start-up, shutdown, and malfunction plan means the plan required under

§ 63.6(e)(3) of subpart A of this part. This plan details the procedures for operation and maintenance of the source during periods of start-up, shutdown, and malfunction.

Storage vessel means a tank or other vessel that is used to store organic liquids that contain one or more of the organic HAP's listed in table 2 of this subpart and that has been assigned, according to the procedures in § 63.100(g) of this subpart, to a chemical manufacturing process unit that is subject to this subpart. Storage vessel does not include:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (3) Vessels with capacities smaller than 38 cubic meters;
- (4) Vessels storing organic liquids that contain organic hazardous air pollutants only as impurities;
- (5) Bottoms receiver tanks;
- (6) Surge control vessels; or
- (7) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a chemical manufacturing process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

Transfer operation means the loading, into a tank truck or railcar, of organic liquids that contain one or more of the organic hazardous air pollutants listed in table 2 of this subpart from a transfer rack (as defined in this section). Transfer operations do not include loading at an operating pressure greater than 204.9 kilopascals.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are assigned to a chemical manufacturing process unit subject to this subpart according to the procedures specified in § 63.100(h) of this subpart and are used to fill tank trucks and/or railcars with organic liquids that contain one or more of the organic hazardous air pollutants listed in table 2 of this subpart. Transfer rack

includes the associated pumps, meters, shutoff valves, relief valves, and other piping and valves. Transfer rack does not include:

(1) Racks, arms, or hoses that only transfer liquids containing organic hazardous air pollutants as impurities;

(2) Racks, arms, or hoses that vapor balance during all loading operations; or

(3) Racks transferring organic liquids that contain organic hazardous air pollutants only as impurities.

Unit operation means one or more pieces of process equipment used to make a single change to the physical or chemical characteristics of one or more process streams. Unit operations include, but are not limited to, reactors, distillation units, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

Vapor balancing system means a piping system that is designed to collect organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading; and to route the collected organic hazardous air pollutants vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected by a common header or to compress and route to a process or a fuel gas system the collected organic hazardous air pollutants vapors.

Waste management unit means the equipment, structure(s), and/or device(s) used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include: Wastewater tanks, surface impoundments, individual drain systems, and biological wastewater treatment units. Examples of equipment that may be waste management units include containers, air flotation units, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. If such equipment is used for recovery then it is part of a chemical manufacturing process unit and is not a waste management unit.

Wastewater means water that:

(1) Contains either:

(i) An annual average concentration of Table 9 compounds (as defined in § 63.111 of subpart G of this part) of at

least 5 parts per million by weight and has an annual average flow rate of 0.02 liter per minute or greater, or

(ii) An annual average concentration of Table 9 compounds (as defined in § 63.111 of subpart G) of at least 10,000 parts per million by weight at any flow rate, and that

(2) Is discarded from a chemical manufacturing process unit that meets all of the criteria specified in § 63.100 (b)(1) through (b)(3) of this subpart. Wastewater is process wastewater or maintenance wastewater.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 18024, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995; 62 FR 2731, Jan. 17, 1997]

§ 63.102 General standards.

(a) Owners and operators of sources subject to this subpart shall comply with the requirements of subparts G and H of this part.

(1) The provisions set forth in this subpart F and subpart G of this part shall apply at all times except during periods of start-up or shutdown (as defined in § 63.101 of this subpart), malfunction, or non-operation of the chemical manufacturing process unit (or specific portion thereof) resulting in cessation of the emissions to which this subpart F and subpart G of this part apply. However, if a start-up, shutdown, malfunction or period of non-operation of one portion of a chemical manufacturing process unit does not affect the ability of a particular emission point to comply with the specific provisions to which it is subject, then that emission point shall still be required to comply with the applicable provisions of this subpart F and subpart G of this part during the start-up, shutdown, malfunction or period of non-operation. For example, if there is an overpressure in the reactor area, a storage vessel in the chemical manufacturing process unit would still be required to be controlled in accordance with § 63.119 of subpart G of the part. Similarly, the degassing of a storage vessel would not affect the ability of a process vent to meet the requirements of § 63.113 of subpart G of this part.

(2) The provisions set forth in subpart H of this part shall apply at all times except during periods of start-up or shutdown, as defined in § 63.101(b) of

this subpart, malfunction, process unit shutdown (as defined in § 63.161 of subpart H of this part), or non-operation of the chemical manufacturing process unit (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which subpart H of this part applies.

(3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with the provisions of this subpart F, subpart G or H of this part during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment, if the shutdown would contravene requirements of this subpart F, subpart G or H of this part applicable to such items of equipment. This paragraph does not apply if the item of equipment is malfunctioning, or if the owner or operator must shut down the equipment to avoid damage due to a contemporaneous start-up, shutdown, or malfunction of the chemical manufacturing process unit or portion thereof.

(4) During start-ups, shutdowns, and malfunctions when the requirements of this subpart F, subparts G and/or H of this part do not apply pursuant to paragraphs (a)(1) through (a)(3) of this section, the owner or operator shall implement, to the extent reasonably available, measures to prevent or minimize excess emissions to the extent practical. For purposes of this paragraph, the term "excess emissions" means emissions in excess of those that would have occurred if there were no start-up, shutdown, or malfunction and the owner or operator complied with the relevant provisions of this subpart F, subparts G and/or H of this part. The measures to be taken shall be identified in the applicable start-up, shutdown, and malfunction plan, and may include, but are not limited to, air pollution control technologies, recovery technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the source. Back-up control devices are not required, but may be used if available.

(b) If, in the judgment of the Administrator, an alternative means of emission limitation will achieve a reduc-

tion in organic HAP emissions at least equivalent to the reduction in organic HAP emissions from that source achieved under any design, equipment, work practice, or operational standards in subpart G or H of this part, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(1) The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under paragraph (b) of this section shall be published only after public notice and an opportunity for a hearing.

(3) Any person seeking permission to use an alternative means of compliance under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

(c) Each owner or operator of a source subject to this subpart shall obtain a permit under 40 CFR part 70 or part 71 from the appropriate permitting authority by the date determined by 40 CFR part 70 or part 71, as appropriate.

(1) If the EPA has approved a State operating permit program under 40 CFR Part 70, the permit shall be obtained from the State authority. If the State operating permit program has not been approved, the source shall apply to the EPA Regional Office.

(2) [Reserved]

(d) The requirements in subparts F, G, and H of this part are Federally enforceable under section 112 of the Act on and after the dates specified in § 63.100(k) of this subpart.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 63626, Dec. 12, 1995; 61 FR 64575, Dec. 5, 1996; 62 FR 2732, Jan. 17, 1997]

§ 63.103 General compliance, reporting, and recordkeeping provisions.

(a) Table 3 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of sources subject to subparts F, G, and H of this part.

(b) Initial performance tests and initial compliance determinations shall

be required only as specified in subparts G and H of this part.

(1) Performance tests and compliance determinations shall be conducted according to the schedule and procedures in §63.7(a) of subpart A of this part and the applicable sections of subparts G and H of this part.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 calendar days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present during the test.

(3) Performance tests shall be conducted according to the provisions of §63.7(e) of subpart A of this part, except that performance tests shall be conducted at maximum representative operating conditions for the process. During the performance test, an owner or operator may operate the control or recovery device at maximum or minimum representative operating conditions for monitored control or recovery device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable subpart or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(5) Performance tests may be waived with approval of the Administrator as specified in §63.7(h)(2) of subpart A of this part. Owners or operators of sources subject to subparts F, G, and H of this part who apply for a waiver of a performance test shall submit the application by the dates specified in paragraph (b)(5)(i) of this section rather than the dates specified in §63.7(h)(3) of subpart A of this part.

(i) If a request is made for an extension of compliance under §63.151(a)(6) of subpart G or §63.6(i) of subpart A of this part, the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested, the application for a waiver of an initial performance test shall be submitted no later than 90 calendar days before the Notification of Compliance Status required in §63.152(b) of

subpart G of this part is due to be submitted.

(ii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the source performing the required test.

(6) The owner or operator of a flexible operation unit shall conduct all required compliance demonstrations during production of the primary product. The owner or operator is not required to conduct compliance demonstrations for operating conditions during production of a product other than the primary product. Except as otherwise provided in this subpart or in subpart G or subpart H of this part, as applicable, the owner or operator shall operate each control device, recovery device, and/or recapture device that is required or used for compliance, and associated monitoring systems, without regard for whether the product that is being produced is the primary product or a different product. Except as otherwise provided in this subpart, subpart G and/or subpart H of this part, as applicable, operation of a control device, recapture device and/or recovery device required or used for compliance such that the daily average of monitored parameter values is outside the parameter range established pursuant to §63.152(b)(2), or such that the monitoring data show operation inconsistent with the monitoring plan established pursuant to §63.120(d)(2) or §63.181(g)(1)(iv), shall constitute a violation of the required operating conditions.

(c) Each owner or operator of a source subject to subparts F, G, and H of this part shall keep copies of all applicable reports and records required by subparts F, G, and H of this part for at least 5 years; except that, if subparts G or H require records to be maintained for a time period different than 5 years, those records shall be maintained for the time specified in subpart G or H of this part. If an owner or operator submits copies of reports to the applicable EPA Regional Office, the owner or operator is not required to maintain copies of reports. If the

EPA Regional Office has waived the requirement of § 63.10(a)(4)(ii) for submittal of copies of reports, the owner or operator is not required to maintain copies of reports.

(1) All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent 6 months of records shall be retained on site or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request. The remaining four and one-half years of records may be retained offsite. Records may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

(2) The owner or operator subject to subparts F, G, and H of this part shall keep the records specified in this paragraph, as well as records specified in subparts G and H.

(i) Records of the occurrence and duration of each start-up, shutdown, and malfunction of operation of process equipment or of air pollution control equipment or continuous monitoring systems used to comply with this subpart F, subpart G, or H of this part during which excess emissions (as defined in § 63.102(a)(4)) occur.

(ii) For each start-up, shutdown, and malfunction during which excess emissions (as defined in § 63.102(a)(4)) occur, records that the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. For example, if a start-up, shutdown, and malfunction plan includes procedures for routing a control device to a backup control device (e.g., the incinerator for a halogenated stream could be routed to a flare during periods when the primary control device is out of service), records must be kept of whether the plan was followed. These records may take the form of a "check-list," or other form of recordkeeping that confirms conformance with the start-up, shutdown, and malfunction plan for the event.

(iii) For continuous monitoring systems used to comply with subpart G of this part, records documenting the

completion of calibration checks and maintenance of continuous monitoring systems that are specified in the manufacturer's instructions or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(3) Records of start-up, shutdown and malfunction and continuous monitoring system calibration and maintenance are not required if they pertain solely to Group 2 emission points, as defined in § 63.111 of subpart G of this part, that are not included in an emissions average.

(d) All reports required under subparts F, G, and H of this part shall be sent to the Administrator at the addresses listed in § 63.13 of subpart A of this part, except that requests for permission to use an alternative means of compliance as provided for in § 63.102(b) of this subpart and application for approval of a nominal efficiency as provided for in § 63.150 (i)(1) through (i)(6) of subpart G of this part shall be submitted to the Director of the EPA Office of Air Quality Planning and Standards rather than to the Administrator or delegated authority.

(1) Wherever subpart A of this part specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(e) The owner or operator of a chemical manufacturing process unit which meets the criteria of § 63.100(b)(1) and § 63.100(b)(3), but not the criteria of § 63.100(b)(2), shall comply with the requirements of either paragraph (e)(1) or (e)(2) of this section.

(1) Retain information, data, and analysis used to determine that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant. Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream

composition, engineering calculations, or process knowledge.

(2) When requested by the Administrator, demonstrate that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant.

(f) To qualify for the exemption specified in § 63.100(b)(4) of this subpart, the owner or operator shall maintain the documentation of the information required pursuant to § 63.100(b)(4)(i), and documentation of any update of this information requested by the EPA Regional Office, and shall provide the documentation to the EPA Regional Office upon request. The EPA Regional Office will notify the owner or operator, after reviewing such documentation, if the source does not qualify for the exemption specified in § 63.100(b)(4) of this section. In such cases, compliance with subpart H shall be required no later than 90 days after expiration of the applicable compliance date in § 63.100(k)(3), but in no event earlier than 90 days after the date of such notification by the EPA Regional Office. Compliance with this subpart F and subpart G of this part shall be no later than April 22, 1997, or as otherwise specified in § 63.100(k)(2)(ii) of this subpart, unless an extension has been granted by the EPA Regional Office or permitting authority as provided in § 63.6(i) of subpart A of this part.

(g) An owner or operator who elects to use the compliance extension provisions of § 63.100(k)(6)(i) or (ii) shall submit a compliance extension request to the appropriate EPA Regional Office no later than 45 days before the applicable compliance date in § 63.100(k)(3), but in no event is submittal required earlier than May 10, 1995. The request shall contain the information specified in § 63.100(k)(5)(iv) and the reason compliance can not reasonably be achieved without a process unit shutdown, as defined in 40 CFR 63.161 or without replacement of the compressor or recasting of the distance piece.

(h) An owner or operator who elects to use the compliance extension provisions of § 63.100(k)(8) shall submit to the appropriate EPA Regional Office a brief description of the process change, identify the HAP eliminated, and the

expected date of cessation of use or production of HAP. The description shall be submitted no later than May 10, 1995, or with the Notice of Compliance Status as required in § 63.182(c) of subpart H, whichever is later.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 60 FR 18024, Apr. 10, 1995; 62 FR 2733, Jan. 17, 1997; 63 FR 26082, May 12, 1998]

§ 63.104 Heat exchange system requirements.

(a) Unless one or more of the conditions specified in paragraphs (a)(1) through (a)(6) of this section are met, owners and operators of sources subject to this subpart shall monitor each heat exchange system used to cool process equipment in a chemical manufacturing process unit meeting the conditions of § 63.100 (b)(1) through (b)(3) of this subpart, except for chemical manufacturing process units meeting the condition specified in § 63.100(c) of this subpart, according to the provisions in either paragraph (b) or (c) of this section. Whenever a leak is detected, the owner or operator shall comply with the requirements in paragraph (d) of this section.

(1) The heat exchange system is operated with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side.

(2) There is an intervening cooling fluid, containing less than 5 percent by weight of total hazardous air pollutants listed in table 4 of this subpart, between the process and the cooling water. This intervening fluid serves to isolate the cooling water from the process fluid and the intervening fluid is not sent through a cooling tower or discharged. For purposes of this section, discharge does not include emptying for maintenance purposes.

(3) The once-through heat exchange system is subject to a National Pollution Discharge Elimination System (NPDES) permit with an allowable discharge limit of 1 part per million or less above influent concentration or 10 percent or less above influent concentration, whichever is greater.

(4) The once-through heat exchange system is subject to an NPDES permit that:

(i) Requires monitoring of a parameter(s) or condition(s) to detect a leak of process fluids into cooling water;

(ii) Specifies or includes the normal range of the parameter or condition;

(iii) Requires monitoring for the parameters selected as leak indicators no less frequently than monthly for the first six months and quarterly thereafter; and

(iv) Requires the owner or operator to report and correct leaks to the cooling water when the parameter or condition exceeds the normal range.

(5) The recirculating heat exchange system is used to cool process fluids that contain less than 5 percent by weight of total hazardous air pollutants listed in table 4 of this subpart.

(6) The once-through heat exchange system is used to cool process fluids that contain less than 5 percent by weight of total hazardous air pollutants listed in table 9 of subpart G of this part.

(b) The owner or operator who elects to comply with the requirements of paragraph (a) of this section by monitoring the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section. The cooling water shall be monitored for total hazardous air pollutants, total volatile organic compounds, total organic carbon, one or more speciated HAP compounds, or other representative substances that would indicate the presence of a leak in the heat exchange system.

(1) The cooling water shall be monitored monthly for the first 6 months and quarterly thereafter to detect leaks.

(2)(i) For recirculating heat exchange systems (cooling tower systems), the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 4 of this subpart.

(ii) For once-through heat exchange systems, the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 9 of subpart G of this part.

(3) The concentration of the monitored substance(s) in the cooling water shall be determined using any EPA-approved method listed in part 136 of this chapter as long as the method is sensitive to concentrations as low as 10 parts per million and the same method is used for both entrance and exit samples. Alternative methods may be used upon approval by the Administrator.

(4) The samples shall be collected either at the entrance and exit of each heat exchange system or at locations where the cooling water enters and exits each heat exchanger or any combination of heat exchangers.

(i) For samples taken at the entrance and exit of recirculating heat exchange systems, the entrance is the point at which the cooling water leaves the cooling tower prior to being returned to the process equipment and the exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid.

(ii) For samples taken at the entrance and exit of once-through heat exchange systems, the entrance is the point at which the cooling water enters and the exit is the point at which the cooling water exits the plant site or chemical manufacturing process units.

(iii) For samples taken at the entrance and exit of each heat exchanger or any combination of heat exchangers in chemical manufacturing process units, the entrance is the point at which the cooling water enters the individual heat exchanger or group of heat exchangers and the exit is the point at which the cooling water exits the heat exchanger or group of heat exchangers.

(5) A minimum of three sets of samples shall be taken at each entrance and exit as defined in paragraph (b)(4) of this section. The average entrance and exit concentrations shall then be calculated. The concentration shall be corrected for the addition of any make-up water or for any evaporative losses, as applicable.

(6) A leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one-sided statistical procedure at the 0.05 level of significance and the amount by which it is greater is at least 1 part per

million or 10 percent of the entrance mean, whichever is greater.

(c) The owner or operator who elects to comply with the requirement of paragraph (a) of this section by monitoring using a surrogate indicator of heat exchange system leaks shall comply with the requirements specified in paragraphs (c)(1) through (c)(3) of this section. Surrogate indicators that could be used to develop an acceptable monitoring program are ion specific electrode monitoring, pH, conductivity or other representative indicators.

(1) The owner or operator shall prepare and implement a monitoring plan that documents the procedures that will be used to detect leaks of process fluids into cooling water. The plan shall require monitoring of one or more surrogate indicators or monitoring of one or more process parameters or other conditions that indicate a leak. Monitoring that is already being conducted for other purposes may be used to satisfy the requirements of this section. The plan shall include the information specified in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(i) A description of the parameter or condition to be monitored and an explanation of how the selected parameter or condition will reliably indicate the presence of a leak.

(ii) The parameter level(s) or conditions(s) that shall constitute a leak. This shall be documented by data or calculations showing that the selected levels or conditions will reliably identify leaks. The monitoring must be sufficiently sensitive to determine the range of parameter levels or conditions when the system is not leaking. When the selected parameter level or condition is outside that range, a leak is indicated.

(iii) The monitoring frequency which shall be no less frequent than monthly for the first 6 months and quarterly thereafter to detect leaks.

(iv) The records that will be maintained to document compliance with the requirements of this section.

(2) If a substantial leak is identified by methods other than those described in the monitoring plan and the method(s) specified in the plan could not detect the leak, the owner or operator shall revise the plan and document the

basis for the changes. The owner or operator shall complete the revisions to the plan no later than 180 days after discovery of the leak.

(3) The owner or operator shall maintain, at all times, the monitoring plan that is currently in use. The current plan shall be maintained on-site, or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request. If the monitoring plan is superseded, the owner or operator shall retain the most recent superseded plan at least until 5 years from the date of its creation. The superseded plan shall be retained on-site (or accessible from a central location by computer or other means that provides access within two hours after a request) for at least 6 months after its creation.

(d) If a leak is detected according to the criteria of paragraph (b) or (c) of this section, the owner or operator shall comply with the requirements in paragraphs (d)(1) and (d)(2) of this section, except as provided in paragraph (e) of this section.

(1) The leak shall be repaired as soon as practical but not later than 45 calendar days after the owner or operator receives results of monitoring tests indicating a leak. The leak shall be repaired unless the owner or operator demonstrates that the results are due to a condition other than a leak.

(2) Once the leak has been repaired, the owner or operator shall confirm that the heat exchange system has been repaired within 7 calendar days of the repair or startup, whichever is later.

(e) Delay of repair of heat exchange systems for which leaks have been detected is allowed if the equipment is isolated from the process. Delay of repair is also allowed if repair is technically infeasible without a shutdown and any one of the conditions in paragraph (e)(1) or (e)(2) of this section is met. All time periods in paragraphs (e)(1) and (e)(2) of this section shall be determined from the date when the owner or operator determines that delay of repair is necessary.

(1) If a shutdown is expected within the next 2 months, a special shutdown before that planned shutdown is not required.

(2) If a shutdown is not expected within the next 2 months, the owner or operator may delay repair as provided in paragraph (e)(2)(i) or (e)(2)(ii) of this section. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as practical.

(i) If a shutdown for repair would cause greater emissions than the potential emissions from delaying repair, the owner or operator may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. The owner or operator shall document the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair as specified in paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section.

(A) The owner or operator shall calculate the potential emissions from the leaking heat exchanger by multiplying the concentration of total hazardous air pollutants listed in table 4 of this subpart in the cooling water from the leaking heat exchanger by the flowrate of the cooling water from the leaking heat exchanger by the expected duration of the delay. The owner or operator may calculate potential emissions using total organic carbon concentration instead of total hazardous air pollutants listed in table 4 of this subpart.

(B) The owner or operator shall determine emissions from purging and depressurizing the equipment that will result from the unscheduled shutdown for the repair.

(ii) If repair is delayed for reasons other than those specified in paragraph (e)(2)(i) of this section, the owner or operator may delay repair up to a maximum of 120 calendar days. The owner shall demonstrate that the necessary parts or personnel were not available.

(f)(1) *Required records.* The owner or operator shall retain the records identified in paragraphs (f)(1)(i) through (f)(1)(iv) of this section as specified in § 63.103(c)(1).

(i) Monitoring data required by this section indicating a leak and the date when the leak was detected, and if demonstrated not to be a leak, the basis for that determination;

(ii) Records of any leaks detected by procedures subject to paragraph (c)(2) of this section and the date the leak was discovered;

(iii) The dates of efforts to repair leaks; and

(iv) The method or procedure used to confirm repair of a leak and the date repair was confirmed.

(2) *Reports.* If an owner or operator invokes the delay of repair provisions for a heat exchange system, the following information shall be submitted in the next semi-annual periodic report required by § 63.152(c) of subpart G of this part. If the leak remains unrepaired, the information shall also be submitted in each subsequent periodic report, until repair of the leak is reported.

(i) The owner or operator shall report the presence of the leak and the date that the leak was detected.

(ii) The owner or operator shall report whether or not the leak has been repaired.

(iii) The owner or operator shall report the reason(s) for delay of repair. If delay of repair is invoked due to the reasons described in paragraph (e)(2) of this section, documentation of emissions estimates must also be submitted.

(iv) If the leak remains unrepaired, the owner or operator shall report the expected date of repair.

(v) If the leak is repaired, the owner or operator shall report the date the leak was successfully repaired.

[62 FR 2733, Jan. 17, 1997]

§ 63.105 Maintenance wastewater requirements.

(a) Each owner or operator of a source subject to this subpart shall comply with the requirements of paragraphs (b) through (e) of this section for maintenance wastewaters containing those organic HAP's listed in table 9 of subpart G of this part.

(b) The owner or operator shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turn-around) and during periods which are

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not shutdowns (i.e., routine maintenance). The descriptions shall:

(1) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.

(2) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and

(3) Specify the procedures to be followed when clearing materials from process equipment.

(c) The owner or operator shall modify and update the information required by paragraph (b) of this section as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure.

(d) The owner or operator shall implement the procedures described in paragraphs (b) and (c) of this section as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part.

(e) The owner or operator shall maintain a record of the information required by paragraphs (b) and (c) of this section as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 63626, Dec. 12, 1995]

§ 63.106 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under Section 112(l) of the CAA, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 63.102(b) of this subpart, § 63.150(i)(1) through (i)(4) of subpart G of this part, and § 63.177 of subpart H of this part.

[59 FR 19454, Apr. 22, 1994, as amended at 61 FR 64575, Dec. 5, 1996]

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS

Chemical name ^a	CAS No. ^b	Group
Acenaphthene	83329	V
Acetal	105577	V

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY CHEMICALS—Continued

Chemical name ^a	CAS No. ^b	Group
Acetaldehyde	75070	II
Acetamide	60355	II
Acetanilide	103844	II
Acetic acid	64197	II
Acetic anhydride	108247	II
Acetoacetanilide	102012	III
Acetone	67641	I
Acetone cyanohydrin	75865	V
Acetonitrile	75058	I
Acetophenone	98862	I
Acrolein	107028	IV
Acrylamide	79061	I
Acrylic acid	79107	IV
Acrylonitrile	107131	I
Adiponitrile	111693	I
Alizarin	72480	V
Alkyl anthraquinones	008	V
Allyl alcohol	107186	I
Allyl chloride	107051	IV
Allyl cyanide	109751	IV
Aminophenol sulfonic acid	0010	V
Aminophenol (p-)	123308	I
Aniline	62533	I
Aniline hydrochloride	142041	III
Anisidine (o-)	90040	II
Anthracene	120127	V
Anthraquinone	84651	III
Azobenzene	103333	I
Benzaldehyde	100527	III
Benzene	71432	I
Benzenedisulfonic acid	98486	I
Benzenesulfonic acid	98113	I
Benzil	134816	III
Benzilic acid	76937	III
Benzoic acid	65850	III
Benzoil	119539	III
Benzonitrile	100470	III
Benzophenone	119619	I
Benzotrithiol	98077	III
Benzoyl chloride	98884	III
Benzyl acetate	140114	III
Benzyl alcohol	100516	III
Benzyl benzoate	120514	III
Benzyl chloride	100447	III
Benzyl dichloride	98873	III
Biphenyl	92524	I
Bisphenol A	80057	III
Bis(Chloromethyl) Ether	542881	I
Bromobenzene	108861	I
Bromoform	75252	V
Bromonaphthalene	27497514	IV
Butadiene (1,3-)	106990	II
Butanediol (1,4-)	110634	I
Butyl acrylate (n-)	141322	V
Butylene glycol (1,3-)	107880	II
Butyrolactone	96480	I
Caprolactam	105602	II
Carbaryl	63252	V
Carbazole	86748	V
Carbon disulfide	75150	IV
Carbon tetrabromide	558134	II
Carbon tetrachloride	56235	I
Carbon tetrafluoride	75730	II
Chloral	75876	II
Chloroacetic acid	79118	II
Chloroacetophenone (2-)	532274	I
Chloroaniline (p-)	106478	II
Chlorobenzene	108907	I
2-Chloro-1,3-butadiene (Chloroprene)	126998	II
Chlorodifluoroethane	25497294	V

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC
CHEMICAL MANUFACTURING INDUSTRY CHEMI-
CALS—Continued

Chemical name ^a	CAS No. ^b	Group
Chlorodifluoromethane	75456	I
Chloroform	67663	I
Chloronaphthalene	25586430	IV
Chloronitrobenzene	121733	I
(m-).		
Chloronitrobenzene	88733	I
(o-).		
Chloronitrobenzene	100005	I
(p-).		
Chlorophenol (m-)	108430	II
Chlorophenol (o-)	95578	II
Chlorophenol (p-)	106489	II
Chlorotoluene (m-)	108418	III
Chlorotoluene (o-)	95498	III
Chlorotoluene (p-)	106434	III
Chlorotrifluoromethane	75729	II
Chrysene	218019	V
Cresol and cresylic acid (m-)	108394	III
Cresol and cresylic acid (o-)	95487	III
Cresol and cresylic acid (p-)	106445	III
Cresols and cresylic acids (mixed)	1319773	III
Cumene	98828	I
Cumene hydroperoxide	80159	I
Cyanoacetic acid	372098	II
Cyclohexane	110827	I
Cyclohexanol	108930	I
Cyclohexanone	108941	I
Cyclohexylamine	108918	III
Cyclooctadienes	29965977	II
Decahydronaphthalene	91178	IV
Diacetoxy-2-Butene (1,4-)	0012	V
Diaminophenol hydrochloride	137097	V
Dibromomethane	74953	V
Dichloroaniline (mixed isomers)	27134276	I
Dichlorobenzene (p-)	106467	I
Dichlorobenzene (m-)	541731	I
Dichlorobenzene (o-)	95501	I
Dichlorobenzidine	91941	I
(3,3'-).		
Dichlorodifluoromethane	75718	I
Dichloroethane	107062	I
(Ethylenedichloride) (EDC).		
Dichloroethyl ether (bis(2- chloroethyl)ether).	111444	I
Dichloroethylene (1,2-)	540590	II
Dichlorophenol (2,4-)	120832	III
Dichloropropene (1,3-)	542756	II
Dichlorotetrafluoro- ethane.	1320372	V
Dichloro-1-butene (3,4-)	760236	II
Dichloro-2-butene (1,4-)	764410	V
Diethanolamine (2,2'-Iminodiethanol)	111422	I
Diethyl sulfate	64675	II
Diethylamine	109897	IV
Diethylaniline (2,6-)	579668	V
Diethylene glycol	111466	I
Diethylene glycol dibutyl ether	112732	I
Diethylene glycol diethyl ether	112367	I
Diethylene glycol dimethyl ether	111966	I
Diethylene glycol monobutyl ether ac- etate.	124174	I
Diethylene glycol monobutyl ether	112345	I
Diethylene glycol monoethyl ether ac- etate.	112152	I
Diethylene glycol monoethyl ether	111900	I
Diethylene glycol monohexyl ether	112594	V
Diethylene glycol monomethyl ether acetate.	629389	V
Diethylene glycol monomethyl ether ..	111773	I

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC
CHEMICAL MANUFACTURING INDUSTRY CHEMI-
CALS—Continued

Chemical name ^a	CAS No. ^b	Group
Dihydroxybenzoic acid (Resorcylic acid).	27138574	V
Dimethylbenzidine	119937	II
(3,3'-).		
Dimethyl ether	115106	IV
Dimethylformamide (N,N-)	68122	II
Dimethylhydrazine	57147	II
(1,1-).		
Dimethyl sulfate	77781	I
Dimethyl terephthalate	120616	II
Dimethylamine	124403	IV
Dimethylaminoethanol (2-)	108010	I
Dimethylaniline (N,N")	121697	III
Dinitrobenzenes (NOS) ^c	25154545	I
Dinitrophenol (2,4-)	51285	III
Dinitrotoluene (2,4-)	121142	III
Dioxane (1,4-) (1,4-Diethyleneoxide)	1239	11I
Dioxolane (1,3-)	646060	I
Diphenyl methane	101815	I
Diphenyl oxide	101848	I
Diphenyl thiourea	102089	III
Diphenylamine	122394	III
Dipropylene glycol	110985	I
Di-o-tolylguanidine	97392	III
Dodecanedioic acid	693232	I
Dodecyl benzene (branched)	123013	V
Dodecyl phenol (branched)	121158585	V
Dodecylaniline	28675174	V
Dodecylbenzene (n-)	121013	I
Dodecylphenol	27193868	III
Epichlorohydrin (1-chloro-2,3- epoxypropane).	106898	I
Ethanolamine	141435	I
Ethyl acrylate	140885	II
Ethylbenzene	100414	I
Ethyl chloride (Chloroethane)	75003	IV
Ethyl chloroacetate	105395	II
Ethylamine	75047	V
Ethylaniline (N-)	103695	III
Ethylaniline (o-)	578541	III
Ethylcellulose	9004573	V
Ethylcyanoacetate	105566	V
Ethylene carbonate	96491	I
Ethylene dibromide (Dibromoethane)	106934	I
Ethylene glycol	107211	I
Ethylene glycol diacetate	111557	I
Ethylene glycol dibutyl ether	112481	V
Ethylene glycol diethyl ether (1,2-diethoxyethane).	629141	I
Ethylene glycol dimethyl ether	110714	I
Ethylene glycol monoacetate	542596	V
Ethylene glycol monobutyl ether	112072	I
acetate.		
Ethylene glycol monobutyl ether	111762	I
Ethylene glycol monoethyl ether	111159	I
acetate.		
Ethylene glycol monoethyl ether	110805	I
Ethylene glycol monohexyl ether	112254	V
Ethylene glycol monomethyl ether ac- etate.	110496	I
Ethylene glycol monomethyl ether	109864	I
Ethylene glycol monoethyl ether	002	V
Ethylene glycol monophenyl ether	122996	I
Ethylene glycol monopropyl ether	2807309	I
Ethylene oxide	75218	I
Ethylenediamine	107153	II
Ethylenediamine tetraacetic acid	60004	V
Ethylenimine (Aziridine)	151564	II
Ethylhexyl acrylate (2-isomer)	103117	II

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC
CHEMICAL MANUFACTURING INDUSTRY CHEMI-
CALS—Continued

Chemical name ^a	CAS No. ^b	Group
Fluoranthene	206440	V
Formaldehyde	50000	I
Formamide	75127	II
Formic acid	64186	II
Fumaric acid	110178	I
Glutaraldehyde	111308	IV
Glyceraldehyde	367475	V
Glycerol	56815	II
Glycine	56406	II
Glyoxal	107222	II
Hexachlorobenzene	118741	II
Hexachlorobutadiene	87683	II
Hexachloroethane	67721	II
Hexadiene (1,4-)	592450	II
Hexamethylene- tetramine.	100970	I
Hexane	110543	V
Hexanetriol (1,2,6-)	106694	IV
Hydroquinone	123319	I
Hydroxyadipaldehyde	141311	V
Isobutyl acrylate	106638	V
Isobutylene	115117	V
Isophorone	78591	IV
Isophorone nitrile	0017	V
Isophthalic acid	121915	III
Isopropylphenol	25168063	III
Linear alkylbenzene	_____ d	I
Maleic anhydride	108316	I
Maleic hydrazide	123331	I
Malic acid	6915157	I
Metanilic acid	121471	I
Methacrylic acid	79414	V
Methanol	67561	IV
Methionine	63683	I
Methyl acetate	79209	IV
Methyl acrylate	96333	V
Methyl bromide (Bromomethane)	74839	IV
Methyl chloride (Chloromethane)	74873	IV
Methyl ethyl ketone (2-butanone)	78933	V
Methyl formate	107313	II
Methyl hydrazine	60344	IV
Methyl isobutyl carbinol	108112	IV
Methyl isobutyl ketone (Hexone)	108101	IV
Methyl isocyanate	624839	IV
Methyl mercaptan	74931	IV
Methyl methacrylate	80626	IV
Methyl phenyl carbinol	98851	II
Methyl tert-butyl ether	1634044	V
Methylamine	74895	IV
Methylaniline (N-)	100618	III
Methylcyclohexane	108872	III
Methylcyclohexanol	25639423	V
Methylcyclohexanone	1331222	III
Methylene chloride (Dichloromethane).	75092	I
Methylene dianiline (4,4'-isomer)	101779	I
Methylene diphenyl diisocyanate (4,4'-) (MDI).	101688	III
Methylionones (a-)	79696	V
Methylpentynol	77758	V
Methylstyrene (a-)	98839	I
Naphthalene	91203	IV
Naphthalene sulfonic acid (a-)	85472	IV
Naphthalene sulfonic acid (b-)	120183	IV
Naphthol (a-)	90153	IV
Naphthol (b-)	135193	IV
Naphtholsulfonic acid (1-)	567180	V
Naphthylamine sulfonic acid (1,4-)	84866	V
Naphthylamine sulfonic acid (2,1-)	81163	V
Naphthylamine (1-)	134327	V

TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC
CHEMICAL MANUFACTURING INDUSTRY CHEMI-
CALS—Continued

Chemical name ^a	CAS No. ^b	Group
Naphthylamine (2-)	91598	V
Nitroaniline (m-)	99092	II
Nitroaniline (o-)	88744	I
Nitroanisole (o-)	91236	III
Nitroanisole (p-)	100174	III
Nitrobenzene	98953	I
Nitronaphthalene (1-)	86577	IV
Nitrophenol (p-)	100027	III
Nitrophenol (o-)	88755	III
Nitropropane (2-)	79469	II
Nitrotoluene (all isomers)	1321126	III
Nitrotoluene (o-)	88722	III
Nitrotoluene (m-)	99081	III
Nitrotoluene (p-)	99990	III
Nitroxylene	25168041	V
Nonylbenzene (branched)	1081772	V
Nonylphenol	25154523	V
Octene-1	111660	I
Octylphenol	27193288	III
Paraformaldehyde	30525894	I
Paraldehyde	123637	II
Pentachlorophenol	87865	III
Pentaerythritol	115775	I
Peracetic acid	79210	II
Perchloromethyl mercaptan	594423	IV
Phenanthrene	85018	V
Phenetidine (p-)	156434	III
Phenol	108952	III
Phenolphthalein	77098	III
Phenolsulfonic acids (all isomers)	1333397	III
Phenyl anthranilic acid (all isomers) ..	91407	III
Phenylenediamine (p-)	106503	I
Phloroglucinol	108736	III
Phosgene	75445	IV
Phthalic acid	88993	III
Phthalic anhydride	85449	III
Phthalimide	85416	III
Phthalonitrile	91156	III
Picoline (b-)	108996	II
Piperazine	110850	I
Propiolactone (beta-)	57578	I
Propionaldehyde	123386	IV
Propionic acid	79094	I
Propylene carbonate	108327	V
Propylene dichloride (1,2- dichloropropane).	78875	IV
Propylene glycol	57556	I
Propylene glycol monomethyl ether ..	107982	I
Propylene oxide	75569	I
Pyrene	129000	V
Pyridine	110861	II
p-tert-Butyl toluene	98511	III
Quinone	106514	III
Resorcinol	108463	I
Salicylic acid	69727	III
Sodium methoxide	124414	IV
Sodium phenate	139026	III
Stilbene	588590	III
Styrene	100425	I
Succinic acid	110156	I
Succinonitrile	110612	I
Sulfanilic acid	121573	III
Sulfolane	126330	I
Tartaric acid	526830	I
Terephthalic acid	100210	II
Tetrabromophthalic anhydride	632791	III
Tetrachlorobenzene (1,2,4,5-)	95943	I
Tetrachloroethane (1,1,2,2-)	79345	II
Tetrachloroethylene (Perchloroethylene).	127184	I

Environmental Protection Agency

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TABLE 1 TO SUBPART F—SYNTHETIC ORGANIC
CHEMICAL MANUFACTURING INDUSTRY CHEMI-
CALS—Continued

Chemical name ^a	CAS No. ^b	Group
Tetrachlorophthalic- anhydride.	117088	III
Tetraethyl lead	78002	IV
Tetraethylene glycol	112607	I
Tetraethylene- pentamine.	112572	V
Tetrahydrofuran	109999	I
Tetrahydronaphthalene	119642	IV
Tetrahydrophthalic anhydride	85438	II
Tetramethylene- diamine.	110601	II
Tetramethylethylenediamine	110189	V
Tetramethyllead	75741	V
Toluene	108883	I
Toluene 2,4 diamine	95807	II
Toluene 2,4 diisocyanate	584849	II
Toluene diisocyanates (mixture)	26471625	II
Toluene sulfonic acids	104154	III
Toluenesulfonyl chloride	98599	III
Toluidine (o-)	95534	II
Trichloroaniline- (2,4,6-).	634935	III
Trichlorobenzene (1,2,3-)	87616	V
Trichlorobenzene (1,2,4-)	120821	I
Trichloroethane (1,1,1-)	71556	II
Trichloroethane (1,1,2-) (Vinyl tri- chloride).	79005	II
Trichloroethylene	79016	I
Trichlorofluoromethane	75694	I
Trichlorophenol (2,4,5-).	95954	I
(1,1,2-) Trichloro (1,2,2-) trifluoroethane.	76131	I
Triethanolamine	102716	I
Triethylamine	121448	IV
Triethylene glycol	112276	I
Triethylene glycol dimethyl ether.	112492	I
Triethylene glycol monoethyl ether	112505	V
Triethylene glycol monomethyl ether	112356	I
Trimethylamine	75503	IV
Trimethylcyclohexanol	933482	IV
Trimethylcyclo- hexanone.	2408379	IV
Trimethylcyclo- hexylamine.	34216347	V
Trimethylolpropane	77996	I
Trimethylpentane (2,2,4-)	540841	V
Tripropylene glycol	24800440	V
Vinyl acetate	108054	II
Vinyl chloride (Chloroethylene)	75014	I
Vinyl toluene	25013154	III
Vinylcyclohexene (4-)	100403	II
Vinylidene chloride (1,1-dichloroethylene).	75354	II
Vinyl(N-)-pyrrolidone(2-)	88120	V
Xanthates	140896	V
Xylene sulfonic acid	25321419	III
Xylenes (NOS) ^c	1330207	I
Xylene (m-)	108383	I
Xylene (o-)	95476	I
Xylene (p-)	106423	I
Xylenols (Mixed)	1300716	V
Xylidene	1300738	III

^aIsomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^bCAS Number = Chemical Abstract Service number.

^cNOS = not otherwise specified.
^dNo CAS number assigned.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31439, June 20, 1996; 63 FR 26082, May 12, 1998]

TABLE 2 TO SUPPART F—ORGANIC HAZARDOUS
AIR POLLUTANTS

Chemical name ^{a,b}	CAS No. ^c
Acenaphthene	83329
Acetaldehyde	75070
Acetamide	60355
Acetonitrile	75058
Acetophenone	98862
Acrolein	107028
Acrylamide	79061
Acrylic acid	79107
Acrylonitrile	107131
Alizarin	72480
Allyl chloride	107051
Aniline	62533
Anisidine (o-)	90040
Anthracene	120127
Anthraquinone	84651
Benzene	71432
Benzotrichloride	98077
Benzyl chloride	100447
Biphenyl	92524
Bis(chloromethyl)ether	542881
Bromoform	75252
Bromonaphthalene	27497514
Butadiene (1,3-)	106990
Carbon disulfide	75150
Carbon tetrachloride	56235
Chloroacetic acid	79118
Chloroacetophenone (2-)	532274
Chlorobenzene	108907
2-Chloro-,1,3-butadiene (Chloroprene)	126998
Chloroform	67663
Chloronaphthalene	25586430
Chrysene	218019
Cresols and cresylic acids (mixed)	1319773
Cresol and cresylic acid (o-)	95487
Cresol and cresylic acid (m-)	108394
Cresol and cresylic acid (p-)	106445
Cumene	98828
Dichlorobenzene (p-)	106467
Dichlorobenzidine (3,3'-)	91941
Dichloroethane (1,2-) (Ethylene dichloride) (EDC).	107062
Dichloroethylether (Bis(2-chloroethyl)ether)	111444
Dichloropropene (1,3-)	542756
Diethanolamine (2,2'-Iminodiethanol)	111422
Dimethylaniline (N,N-)	121697
Diethyl sulfate	64675
Dimethylbenzidine (3,3'-)	119937
Dimethylformamide (N,N-)	68122
Dimethylhydrazine (1,1-)	58147
Dimethylphthalate	131113
Dimethylsulfate	77781
Dinitrophenol (2,4-)	51285
Dinitrotoluene (2,4-)	121142
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911
1,2-Diphenylhydrazine	122667
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
Ethyl acrylate	140885
Ethylbenzene	100414
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene glycol	107211
Ethylene oxide	75218
Ethylidene dichloride (1,1-Dichloroethane)	75343

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TABLE 2 TO SUPPART F—ORGANIC HAZARDOUS
AIR POLLUTANTS—Continued

Chemical name ^{a,b}	CAS No. ^c
Fluoranthene	206440
Formaldehyde	50000
Glycol ethers ^d	
Hexachlorobenzene	118741
Hexachlorobutadiene	87683
Hexachloroethane	67721
Hexane	110543
Hydroquinone	123319
Isophorone	78591
Maleic anhydride	108316
Methanol	67561
Methylbromide (Bromomethane)	74839
Methylchloride (Chloromethane)	74873
Methyl ethyl ketone (2-Butanone)	78933
Methyl hydrazine	60344
Methyl isobutyl ketone (Hexone)	108101
Methyl isocyanate	624839
Methyl methacrylate	80626
Methyl tert-butyl ether	1634044
Methylene chloride (Dichloromethane)	75092
Methylene diphenyl diisocyanate (4,4'-) (MDI) ...	101688
Methylenedianiline (4,4'-)	101779
Naphthalene	91203
Naphthalene sulfonic acid (α)	85472
Naphthalene sulfonic acid (β)	120183
Naphthol (α)	90153
Naphthol (β)	135193
Naphtholsulfonic acid (1-)	567180
Naphthylamine sulfonic acid (1,4-)	84866
Naphthylamine sulfonic acid (2,1-)	81163
Naphthylamine (1-)	134327
Naphthylamine (2-)	91598
Nitronaphthalene (1-)	86577
Nitrobenzene	98953
Nitrophenol (p-)	100027
Nitropropane (2-)	79469
Phenanthrene	85018
Phenol	108952
Phenylenediamine (p-)	106503
Phosgene	75445
Phthalic anhydride	85449
Propiolactone (beta-)	57578
Propionaldehyde	123386
Propylene dichloride (1,2-Dichloropropane)	78875

TABLE 2 TO SUPPART F—ORGANIC HAZARDOUS
AIR POLLUTANTS—Continued

Chemical name ^{a,b}	CAS No. ^c
Propylene oxide	75569
Pyrene	129000
Quinone	106514
Styrene	100425
Tetrachloroethane (1,1,2,2-)	79345
Tetrachloroethylene (Perchloroethylene)	127184
Tetrahydronaphthalene	119642
Toluene	108883
Toluene diamine (2,4-)	95807
Toluene diisocyanate (2,4-)	584849
Toluidine (o-)	95534
Trichlorobenzene (1,2,4-)	120821
Trichloroethane (1,1,1-) (Methyl chloroform)	71556
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005
Trichloroethylene	79016
Trichlorophenol (2,4,5-)	95954
Triethylamine	121448
Trimethylpentane (2,2,4-)	540841
Vinyl acetate	108054
Vinyl chloride (Chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylenes (NOS)	1330207
Xylene (m-)	108383
Xylene (o-)	95476
Xylene (p-)	106423

^aFor all Listings above containing the word “Compounds,” the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.

^bIsomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^cCAS No.=Chemical Abstract Service number.

^dIncludes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH₂)_n-OR where:

n=1, 2, or 3;

R=alkyl or aryl groups; and

R'=R, H or groups which, when removed, yield glycol ethers with the structure:

R-(OCH₂ CH₂)_n-OH

Polymers are excluded from the glycol category.

[62 FR 2735, Jan. 17, 1997]

TABLE 3.—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H^a to Subpart F

Reference	Applies to subparts F, G, and H	Comment
63.1(a)(1)	Yes	Overlap clarified in § 63.101, § 63.111, § 63.161. § 63.110 and § 63.160(b) of subparts G and H identify which standards are overridden. Subpart F specifies applicability of each paragraph in subpart A to subparts F, G, and H.
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	No	
63.1 (a)(5)—(a)(9)	No	Subparts F, G, and H specify calendar or operating day. Subpart F § 63.103(d) specifies acceptable methods for submitting reports. ^a Subpart F specifies applicability.
63.1(a)(10)	No	
63.1(a)(11)	No	
63.1 (a)(12)—(a)(14)	Yes	
63.1(b)(1)	No	Subpart F specifies applicability. Area sources are not subject to subparts F, G, and H.
63.1(b)(2)	Yes	
63.1(b)(3)	No	
63.1(c)(1)	No	
63.1(c)(2)	No	Subparts G and H specify applicable notification requirements.
63.1(c)(3)	No	
63.1(c)(4)	Yes	
63.1(c)(5)	No	
63.1(d)	No	Subparts F, G, and H established before permit program. Subpart F § 63.101(a) specifies those subpart A definitions that apply to the HON. Subpart F definition of "source" is equivalent to subpart A definition of "affected source." Units of measure are spelled out in subparts F, G, and H.
63.1(e)	No	
63.2	Yes	
63.3	No	
63.4 (a)(1)—(a)(3)	Yes	This is a reserved paragraph in subpart A of part 63.
63.4(a)(4)	No	
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	Except the terms "source" and "stationary source" in § 63.5(a)(1) should be interpreted as having the same meaning as "affected source."
63.5(a)(1)	Yes	
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Except § 63.100(l) defines when construction or reconstruction is subject to standards for new sources. This is a reserved paragraph in subpart A of part 63.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	Except § 63.100(l) defines when construction or reconstruction is subject to standards for new sources. This is a reserved paragraph in subpart A of part 63. For subpart G, see § 63.151(b) (2)(ii) and (2)(iii) for the applicability and timing of this submittal. Except § 63.5(d)(1)(ii)(H) does not apply. Subpart G requires submittal of the Notification of Compliance Status in § 63.152(b); subpart H specifies requirements in § 63.182(c).
63.5(c)	No	
63.5(d)(1)(i)	No	
63.5(d)(1)(ii)	Yes	
63.5(d)(1)(iii)	No	

TABLE 3.—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H^a to Subpart F—Continued

Reference	Applies to subparts F, G, and H	Comment
63.5(d)(2)	No.	Except § 63.5(d)(3)(ii) does not apply to subpart G.
63.5(d)(3)	Yes—subpart G No—subpart H.	
63.5(d)(4)	Yes.	
63.5(e)	Yes.	
63.5(f)(1)	Yes.	Except the cross-reference to § 63.5(d)(1) is changed to § 63.151(b)(2)(ii) of subpart G and to § 63.182(b)(2)(ii) of subpart H. The cross-reference to § 63.5(b)(2) does not apply.
63.5(f)(2)	Yes.	
63.6(a)	Yes.	
63.6(b)(1)	No.	
63.6(b)(2)	No.	Subparts F and H specify compliance dates for sources subject to subparts F, G, and H.
63.6(b)(3)	Yes.	
63.6(b)(4)	No.	
63.6(b)(5)	No.	
63.6(b)(6)	No.	May apply when standards are proposed under Section 112(f) of the Clean Air Act. Subparts G and H include notification requirements.
63.6(b)(7)	No.	
63.6(c)(1)	No.	
63.6(c)(2)	No.	
63.6(c)(3)	No.	Subpart F specifies the compliance dates for subparts G and H.
63.6(c)(4)	No.	
63.6(c)(5)	Yes.	
63.6(d)	No.	
63.6(e)	Yes.	Except as otherwise specified for individual paragraphs. Does not apply to Group 2 emission points unless they are included in an emissions average. ^b This is addressed by § 63.102(a)(4) of subpart F.
63.6(e)(1)(i)	No.	
63.6(e)(1)(ii)	Yes.	
63.6(e)(1)(iii)	Yes.	
63.6(e)(2)	Yes.	For subpart H, the startup, shutdown, and malfunction plan requirement of § 63.6(e)(3)(i) is limited to control devices subject to the provisions of subpart H and is optional for other equipment subject to subpart H. The startup, shutdown, and malfunction plan may include written procedures that identify conditions that justify a delay of repair. This is addressed by § 63.102(a)(4).
63.6(e)(3)(i)	Yes.	
63.6(e)(3)(i)(A)	No.	
63.6(e)(3)(i)(B)	Yes.	
63.6(e)(3)(i)(C)	Yes.	Recordkeeping and reporting are specified in § 63.103(c)(2) of subpart F and § 63.152(d)(1) of subpart G. Recordkeeping and reporting are specified in § 63.103(c)(2) of subpart F and § 63.152(d)(1) of subpart G. Records retention requirements are specified in § 63.103(c).
63.6(e)(3)(ii)	Yes.	
63.6(e)(3)(iii)	No.	
63.6(e)(3)(iv)	No.	
63.6(e)(3)(v)	No.	Except the plan must provide for operation in compliance with § 63.102(a)(4).
63.6(e)(3)(vi)	Yes.	
63.6(e)(3)(vii)	Yes.	
63.6(e)(3)(vii)(A)	Yes.	
63.6(e)(3)(vii)(B)	Yes.	

63.6(e)(3)(vii)(C)	Yes.	§ 63.102(a) of subpart F specifies when the standards apply.
63.6(e)(3)(viii)	Yes.	
63.6(f)(1)	No	
63.6(f)(2)(i)	Yes.	§ 63.152(c)(2) of subpart G specifies the use of monitoring data in determining compliance with subpart G.
63.6(f)(2)(ii)	Yes—subpart G No—subpart H.	
63.6(f)(2)(iii) (A), (B), and (C)	Yes.	
63.6(f)(2)(iii)(D)	No.	
63.6(f)(2)(iv)	Yes.	
63.6(f)(2)(v)	Yes.	
63.6(f)(3)	Yes.	
63.6(g)	No	Procedures specified in § 63.102(b) of subpart F.
63.6(h)	No.	
63.6(i)(1)	Yes.	For subpart G, § 63.151(a)(6) specifies procedures; for subpart H, § 63.182(a)(6) specifies procedures.
63.6(i)(2)	Yes.	
63.6(i)(3)	No	Dates are specified in § 63.151(a)(6)(i) of subpart G and § 63.182(a)(6)(i) of subpart H.
63.6(i)(4)(i)(A)	Yes.	
63.6(i)(4)(i)(B)	No	
63.6(i)(4)(ii)	No.	
63.6(j) (5)—(14)	Yes.	
63.6(l)(15)	No.	
63.6(l)(16)	Yes.	
63.6(j)	Yes.	Subparts F, G, and H specify required testing and compliance demonstration procedures. For subpart G, test results must be submitted in the Notification of Compliance Status due 150 days after compliance date, as specified in § 63.152(b); for subpart H, all test results subject to reporting are reported in periodic reports.
63.7(a)(1)	No	
63.7(a)(2)	No	
63.7(a)(3)	Yes.	
63.7(b)	No.	
63.7(c)	No.	
63.7(d)	Yes.	
63.7(e)(1)	Yes.	
63.7(e)(2)	Yes.	Subparts F, G, and H specify test methods and procedures.
63.7(e)(3)	No	
63.7(e)(4)	Yes.	Subparts F, G, and H specify applicable methods and provide alternatives. Performance test reporting specified in § 63.152(b) of subpart G: Not applicable to subpart H because no performance test required by subpart H.
63.7(f)	No	
63.7(g)	No	
63.7(h)(1)	Yes.	§ 63.103(b)(5) of subpart F specifies provisions for requests to waive performance tests.
63.7(h)(2)	Yes.	
63.7(h)(3)	No	
63.7(h)(4)	No.	
63.7(h)(5)	Yes.	
63.8(a)(1)	Yes.	
63.8(a)(2)	No.	
63.8(a)(3)	No.	
63.8(a)(4)	Yes.	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	Subparts G and H specify locations to conduct monitoring.

TABLE 3.—GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H^a to Subpart F—Continued

Reference	Applies to subparts F, G, and H	Comment
63.8(b)(3)	Yes.	For subpart G, submit as part of periodic report required by § 63.152(c); for subpart H, retain as required by § 63.181(g)(2)(ii).
63.8(c)(1)(i)	Yes.	
63.8(c)(1)(ii)	No	
63.8(c)(1)(iii)	Yes.	Subpart G specifies monitoring frequency by kind of emission point and control technology used (e.g., § 63.111, § 63.120(d)(2), § 63.143, and § 63.152(f)); subpart H does not require use of continuous monitoring systems.
63.8(c)(2)	Yes.	
63.8(c)(3)	Yes.	
63.8(c)(4)	No	Timeframe for submitting request specified in § 63.151(f) or (g) of subpart G; not applicable to subpart H because subpart H specifies acceptable alternative methods.
63.8(c)(5)–(c)(8)	No.	
63.8(d)	No.	
63.8(e)	No.	Subparts G and H do not require continuous emission monitoring. Data reduction procedures specified in § 63.152(f) and (g) of subpart G; not applicable to subpart H.
63.8(f)(1)–(f)(3)	Yes.	
63.8(f)(4)(i)	No	
63.8(f)(4)(ii)	Yes.	Specified in § 63.151(b)(2) of subpart G; specified in § 63.182(b) of subpart H. Initial Notification provisions are specified in § 63.151(b) of subpart G; in § 63.182(b) of subpart H.
63.8(f)(4)(iii)	No.	
63.8(f)(5)(i)	Yes.	
63.8(f)(5)(ii)	No.	Except that the notification in § 63.9(b)(4)(i) shall be submitted at the time specified in § 63.151(b)(2)(ii) of subpart G; in § 63.182(b)(2) of subpart H. Except that the notification in § 63.9(b)(5) shall be submitted at the time specified in § 63.151(b)(2)(ii) of subpart G; in § 63.182(b)(2) of subpart H.
63.8(f)(5)(iii)	Yes.	
63.8(f)(6)	No	
63.8(g)	No	§ 63.152(b) of subpart G and § 63.182(c) of subpart H specify Notification of Compliance Status requirements.
63.9(a)	Yes.	
63.9(b)(1)	No	
63.9(b)(2)	No	§ 63.103(c) of subpart F specifies record retention requirements. § 63.103(c) of subpart F specifies required records.
63.9(b)(3)	No.	
63.9(b)(4)	Yes	
63.9(b)(5)	Yes	§ 63.152(b) of subpart G and § 63.182(c) of subpart H specify Notification of Compliance Status requirements.
63.9(c)	Yes.	
63.9(d)	Yes.	
63.9(e)	No.	§ 63.152(b) of subpart G and § 63.182(c) of subpart H specify Notification of Compliance Status requirements.
63.9(f)	No.	
63.9(g)	No.	
63.9(h)	No	§ 63.152(b) of subpart G and § 63.182(c) of subpart H specify Notification of Compliance Status requirements.
63.9(i)	Yes.	
63.9(j)	No.	
63.10(a)	Yes.	§ 63.103(c) of subpart F specifies record retention requirements. § 63.103(c) of subpart F specifies required records.
63.10(b)(1)	No	
63.10(b)(2)	No	

63.10(b)(3)	No.		
63.10(c)	No.		
63.10(d)(1)	No.		§ 63.152(b) of subpart G specifies performance test reporting; not applicable to subpart H.
63.10(d)(2)	No.		
63.10(d)(3)	No.		
63.10(d)(4)	Yes.		Except that reports required by § 63.10(d)(5) shall be submitted at the time specified in § 63.152(d) of subpart G and in § 63.182(d) of subpart H.
63.10(d)(5)	Yes		
63.10(e)	No.		
63.10(f)	Yes.		
63.11–63.15	Yes.		

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b The plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

[62 FR 2737, Jan. 17, 1997]

Pt. 63, Subpt. F, Table 4

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TABLE 4 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS SUBJECT TO COOLING TOWER MONITORING REQUIREMENTS IN § 63.104

Chemical name	CAS Number ^a
Acetaldehyde	75070
Acetonitrile	75058
Acetophenone	98862
Acrolein	107028
Acrylonitrile	107131
Allyl chloride	107051
Aniline	62533
Anisidine (o-)	90040
Benzene	71432
Benzyl chloride	100447
Biphenyl	92524
Bromoform	75252
Butadiene (1,3-)	106990
Carbon disulfide	75150
Carbon tetrachloride	56235
Chloroacetophenone (2-)	532274
Chlorobenzene	108907
2-Chloro-1,3-butadiene (Chloroprene)	126998
Chloroform	67663
Cresol and cresylic acid (o-)	95487
Cresol and cresylic acid (m-)	108394
Cresol and cresylic acid (p-)	106445
Cumene	98828
Dichlorobenzene (p-)	106467
Dichlorobenzidine (3,3'-)	91941
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107062
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444
Dichloropropene (1,3-)	542756
Diethylene glycol diethyl ether	112367
Diethylene glycol dimethyl ether	111966
Diethyl sulfate	64675
Dimethylaniline (N,N-)	121697
Dimethylhydrazine (1,1-)	57147
Dimethyl phthalate	131113
Dimethyl sulfate	77781
Dinitrophenol (2,4-)	51285
Dinitrotoluene (2,4-)	121142
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
Ethyl acrylate	140885
Ethylbenzene	100414
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene glycol dimethyl ether	110714
Ethylene glycol monobutyl ether	111762
Ethylene glycol monobutyl ether acetate	112072
Ethylene glycol monoethyl ether acetate	111159
Ethylene glycol monoethyl ether	110805
Ethylene glycol monomethyl ether	109864
Ethylene glycol monomethyl ether acetate	110496
Ethylene glycol monopropyl ether	2807309
Ethylene oxide	75218
Ethylidene dichloride (1,1-Dichloroethane)	75343
Formaldehyde	50000
Hexachlorobenzene	118741
Hexachlorobutadiene	87683
Hexachloroethane	67721
Hexane	110543
Isophorone	78591
Methanol	67561
Methyl bromide (Bromomethane)	74839
Methyl chloride (Chloromethane)	74873
Methyl ethyl ketone (2-Butanone)	78933
Methyl hydrazine	60344
Methyl isobutyl ketone (Hexone)	108101
Methyl methacrylate	80626

TABLE 4 TO SUBPART F—ORGANIC HAZARDOUS AIR POLLUTANTS SUBJECT TO COOLING TOWER MONITORING REQUIREMENTS IN § 63.104—Continued

Chemical name	CAS Number ^a
Methyl tert-butyl ether	1634044
Methylene chloride (Dichloromethane)	75092
Methylenedianiline (4,4'-)	101779
Naphthalene	91203
Nitrobenzene	98953
Nitropropane (2-)	79469
Phenol	108952
Phenylenediamine (p-)	106503
Phosgene	75445
Propionaldehyde	123386
Propylene dichloride (1,2-Dichloropropane)	78875
Propylene oxide	75569
Quinone	106514
Styrene	100425
Tetrachloroethane (1,1,2,2-)	79345
Tetrachloroethylene (Perchloroethylene)	127184
Toluene	108883
Toluidine (o-)	95534
Trichlorobenzene (1,2,4-)	120821
Trichloroethane (1,1,1-) (Methyl chloroform)	71556
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005
Trichloroethylene	79016
Trichlorophenol (2,4,5-)	95954
Triethylamine	121448
Trimethylpentane (2,2,4-)	540841
Vinyl acetate	108054
Vinyl chloride (chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylene (m-)	108383
Xylene (o-)	95476
Xylene (p-)	106423

^a CAS Number=Chemical Abstract Service number.

[62 FR 2740, Jan. 17, 1997]

Subpart G—National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater

SOURCE: 59 FR 19468, Apr. 22, 1994, unless otherwise noted.

§ 63.110 Applicability.

(a) This subpart applies to all process vents, storage vessels, transfer racks, and wastewater streams within a source subject to subpart F of this part.

(b) *Overlap with other regulations for storage vessels.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 or Group 2 storage vessel that is also subject to the

provisions of 40 CFR part 60, subpart Kb is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 storage vessel that is also subject to the provisions of 40 CFR part 61, subpart Y is required to comply only with the provisions of this subpart.

(3) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 2 storage vessel that is also subject to the provisions of 40 CFR part 61, subpart Y is required to comply only with the provisions of 40 CFR part 61, subpart Y. The recordkeeping and reporting requirements of 40 CFR part 61, subpart Y will be accepted as compliance with the recordkeeping and reporting requirements of this subpart.

(c) *Overlap with other regulations for transfer racks.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 transfer rack that is also subject to the provisions of 40 CFR part 61, subpart BB is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 2 transfer rack that is also subject to the provisions of 40 CFR part 61, subpart BB is required to comply with the provisions of either paragraph (c)(2)(i) or (c)(2)(ii) of this subpart.

(i) If the transfer rack is subject to the control requirements specified in § 61.302 of 40 CFR part 61, subpart BB, then the transfer rack is required to comply with the control requirements of § 61.302 of 40 CFR part 61, subpart BB. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 61, subpart BB or with the testing, monitoring, recordkeeping, and reporting requirements specified in this subpart for Group 1 transfer racks. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the transfer rack is subject only to reporting and recordkeeping requirements under 40 CFR part 61, sub-

part BB, then the transfer rack is required to comply only with the reporting and recordkeeping requirements specified in this subpart for Group 2 transfer racks and is exempt from the reporting and recordkeeping requirements in 40 CFR part 61, subpart BB.

(d) *Overlap with other regulations for process vents.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart III is required to comply only with the provisions of this subpart.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR part 60, subpart III shall determine requirements according to paragraphs (d)(2)(i) and (d)(2)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart III, the process vent is required to comply with the provisions in paragraphs (d)(2)(i)(A) through (d)(2)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart III for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart III for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and

(C) The control requirements in § 60.612 of 40 CFR part 60, subpart III. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart III or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart III, the process

vent is required to comply only with the provisions specified in paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart III for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart III for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;

(C) If the provisions of both this subpart and 40 CFR part 60, subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(D) If only the provisions of 40 CFR part 60, subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart III for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(3) After the compliance dates specified in § 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart III elects to control the process vent to the levels required in § 63.113 (a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 60, subpart III.

(4) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart NNN is required to comply only with the provisions of this subpart.

(5) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR part 60, subpart NNN shall determine requirements according to paragraphs (d)(5)(i) and (d)(5)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart NNN, the process vent is required to comply with the provisions in paragraphs (d)(5)(i)(A) through (d)(5)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and

(C) The control requirements in § 60.662 of 40 CFR part 60, subpart NNN. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart NNN or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart NNN, the process vent is required to comply only with the provisions specified in paragraphs (d)(5)(ii)(A) through (d)(5)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart

NNN for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;

(C) If the provisions of both this subpart and 40 CFR part 60, subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(D) If only the provisions of 40 CFR part 60, subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart NNN for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(6) After the compliance dates specified in § 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart NNN elects to control the process vent to the levels required in § 63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 60, subpart NNN.

(7) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart RRR is required to comply only with the provisions of this subpart.

(8) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR part 60, subpart RRR shall determine requirements according to paragraphs (d)(8)(i) and (d)(8)(ii) of this section.

(i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, sub-

part RRR, the process vent is required to comply with the provisions in paragraphs (d)(8)(i)(A) through (d)(8)(i)(C) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and

(C) The control requirements in § 60.702 of 40 CFR part 60, subpart RRR. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart RRR or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart RRR, the process vent is required to comply only with the provisions specified in paragraphs (d)(8)(ii)(A) through (d)(8)(ii)(D) of this section.

(A) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for applicability determination and the associated recordkeeping and reporting;

(B) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;

(C) If the provisions of both this subpart and 40 CFR part 60, subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(D) If only the provisions of 40 CFR part 60, subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart RRR for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(9) After the compliance dates specified in § 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart RRR elects to control the process vent to the levels required in § 63.113(a)(1) or (a)(2) of this subpart without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 60, subpart RRR.

(10) As an alternative to the requirements of paragraphs (d)(2), (d)(3), (d)(5), (d)(6), (d)(8), and/or (d)(9) of this section as applicable, if a chemical manufacturing process unit has equipment subject to the provisions of this subpart and equipment subject to the provisions of 40 CFR part 60, subpart III, NNN, or RRR, the owner or operator may elect to apply this subpart to all such equipment in the chemical manufacturing process unit. If the owner or operator elects this method of compliance, all total organic compounds minus methane and ethane, in such equipment shall be considered for purposes of applicability and compliance with this subpart, as if they were organic hazardous air pollutants. Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with 40 CFR part 60, subpart III, NNN, or RRR, as applicable.

(e) *Overlap with other regulations for wastewater.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 1 or Group 2 wastewater stream that is also subject to the provisions of

40 CFR part 61, subpart FF is required to comply with the provisions of both this subpart and 40 CFR part 61, subpart FF. Alternatively, the owner or operator may elect to comply with the provisions of paragraphs (e)(1)(i) and (e)(1)(ii) of this section, which shall constitute compliance with the provisions of 40 CFR part 61, subpart FF.

(i) Comply with the provisions of this subpart; and

(ii) For any Group 2 wastewater stream or organic stream whose benzene emissions are subject to control through the use of one or more treatment processes or waste management units under the provisions of 40 CFR part 61, subpart FF on or after December 31, 1992, comply with the requirements of this subpart for Group 1 wastewater streams.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any Group 1 or Group 2 wastewater stream that is also subject to provisions in 40 CFR parts 260 through 272 shall comply with the requirements of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(i) For each Group 1 or Group 2 wastewater stream, the owner or operator shall comply with the more stringent control requirements (e.g., waste management units, numerical treatment standards, etc.) and the more stringent testing, monitoring, recordkeeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272. The owner or operator shall keep a record of the information used to determine which requirements were the most stringent and shall submit this information if requested by the Administrator; or

(ii) The owner or operator shall submit, no later than four months before the applicable compliance date specified in § 63.100 of subpart F of this part, a request for a case-by-case determination of requirements. The request shall include the information specified in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) Identification of the wastewater streams that are subject to this subpart and to provisions in 40 CFR parts 260 through 272, determination of the Group 1/Group 2 status of those

streams, determination of whether or not those streams are listed or exhibit a characteristic as specified in 40 CFR part 261, and determination of whether the waste management unit is subject to permitting under 40 CFR part 270.

(B) Identification of the specific control requirements (e.g., waste management units, numerical treatment standards, etc.) and testing, monitoring, recordkeeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272.

(f) *Overlap with the Vinyl Chloride NESHAP.* (1) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any Group 1 process vent that is also subject to the provisions of 40 CFR part 61, subpart F shall comply only with the provisions of this subpart.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any Group 2 process vent that is also subject to the provisions of 40 CFR part 61, subpart F shall comply with the provisions specified in either paragraph (f)(2)(i) or (f)(2)(ii) of this subpart.

(i) If the process vent is already controlled by a combustion device meeting the requirements of 40 CFR part 61, subpart F, then the owner or operator shall comply with either the associated testing, monitoring, reporting, and recordkeeping provisions for Group 1 process vents in this subpart or the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 61, subpart F. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the process vent is not already controlled by a combustion device, then the owner or operator shall comply with the provisions of both this subpart and 40 CFR part 61, subpart F.

(3) After the compliance dates specified in § 63.100 of subpart F of this part, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of 40 CFR part 61, subpart F elects to control the process vent to the levels required in § 63.113(a)(1) or (a)(2) of this subpart

without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d) of this subpart then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 61, subpart F.

(4) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of a Group 1 or Group 2 wastewater stream that is also subject to the provisions of 40 CFR part 61, subpart F shall comply with the provisions of either paragraph (f)(4)(i) or (f)(4)(ii) of this section.

(i) The owner or operator shall comply with the provisions of both this subpart and 40 CFR part 61, subpart F or

(ii) The owner or operator may submit, no later than four months before the applicable compliance date specified in § 63.100 of subpart F of this part, information demonstrating how compliance with 40 CFR Part 61, subpart F, will also ensure compliance with this subpart. The information shall include a description of the testing, monitoring, reporting, and recordkeeping that will be performed.

(g) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of subpart G is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart G.

(h) *Overlap with other regulations for monitoring, recordkeeping, or reporting with respect to combustion devices, recovery devices, or recapture devices.* After the compliance dates specified in § 63.100 of subpart F of this part, if any combustion device, recovery device, or recapture device subject to this subpart is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR part 264, subpart AA or CC, or is subject to monitoring and recordkeeping requirements in 40 CFR part 265, subpart AA or CC and the

owner or operator complies with the periodic reporting requirements under 40 CFR part 264, subpart AA or CC that would apply to the device if the facility had final-permitted status, the owner or operator may elect to comply either with the monitoring, recordkeeping, and reporting requirements of this subpart, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping, and reporting requirements of this subpart. The owner or operator shall identify which option has been selected in the Notification of Compliance Status required by § 63.152(b).

[59 FR 19468, Apr. 22, 1994, as amended at 59 FR 53360, Oct. 24, 1994; 60 FR 5321, Jan. 27, 1995; 61 FR 64575, Dec. 5, 1996; 62 FR 2742, Jan. 17, 1997]

§ 63.111 Definitions.

All terms used in this subpart shall have the meaning given them in the Act, in subpart F of this part, and in this section, as follows.

Air oxidation reactor means a device or vessel in which air, or a combination of air and oxygen, is used as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds. Air oxidation reactor includes the product separator and any associated vacuum pump or steam jet.

Annual average concentration, as used in the wastewater provisions, means the flow-weighted annual average concentration, as determined according to the procedures specified in § 63.144(b) of this subpart.

Annual average flow rate, as used in the wastewater provisions, means the annual average flow rate, as determined according to the procedures specified in § 63.144(c).

Automated monitoring and recording system means any means of measuring values of monitored parameters and creating a hard copy or computer record of the measured values that does not require manual reading of monitoring instruments and manual transcription of data values. Automated monitoring and recording sys-

tems include, but are not limited to, computerized systems and strip charts.

Batch operation means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a unit operation within a chemical manufacturing process unit and distilled or reacted at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator. Boiler also means any industrial furnace as defined in 40 CFR 260.10.

By compound means by individual stream components, not carbon equivalents.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Chemical manufacturing process unit means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. A chemical manufacturing process unit consists of more than one unit operation. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing

process unit is identified by its primary product.

Closed biological treatment process means a tank or surface impoundment where biological treatment occurs and air emissions from the treatment process are routed to either a control device by means of a closed vent system or to a fuel gas system by means of hard-piping. The tank or surface impoundment has a fixed roof, as defined in § 63.111 of this subpart, or a floating flexible membrane cover that meets the requirements specified in § 63.134 of this subpart.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic hazardous air pollutant emissions.

Container, as used in the wastewater provisions, means any portable waste management unit that has a capacity greater than or equal to 0.1 m³ in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in § 63.152(f) or § 63.152(g) of this subpart.

Continuous recorder means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minute or more frequent block average values.

Continuous seal means a seal that forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

Continuous vapor processing system means a vapor processing system that

treats total organic compound vapors collected from tank trucks or railcars on a demand basis without intermediate accumulation in a vapor holder.

Control device means any combustion device, recovery device, or recapture device. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents, recapture devices are considered control devices but recovery devices are not considered control devices, and for a steam stripper, a primary condenser is not considered a control device.

Cover, as used in the wastewater provisions, means a device or system which is placed on or over a waste management unit containing wastewater or residuals so that the entire surface area is enclosed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed when not in use. Examples of covers include a fixed roof installed on a wastewater tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

Distillate receiver means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

Distillation unit means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often

has sections connected by screws or crimping. Hard-piping is not ductwork.

Enhanced biological treatment system or enhanced biological treatment process means an aerated treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles recovered biomass to the aeration unit. The mixed liquor volatile suspended solids (biomass) is greater than 1 kilogram per cubic meter homogeneously distributed throughout each aeration unit. The biomass is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation.

External floating roof means a pontoon-type or double-deck-type cover that rests on the liquid surface in a storage vessel or waste management unit with no fixed roof.

Fill or filling means the introduction of organic hazardous air pollutant into a storage vessel or the introduction of a wastewater stream or residual into a waste management unit, but not necessarily to complete capacity.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere.

Fixed roof means a cover that is mounted on a waste management unit or storage vessel in a stationary manner and that does not move with fluctuations in liquid level.

Flame zone means the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope.

Floating roof means a cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and waste management unit or storage vessel wall.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous stream(s) generated by

onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices, or in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

Group 1 process vent means a process vent for which the flow rate is greater than or equal to 0.005 standard cubic meter per minute, the total organic HAP concentration is greater than or equal to 50 parts per million by volume, and the total resource effectiveness index value, calculated according to §63.115 of this subpart, is less than or equal to 1.0.

Group 2 process vent means a process vent for which the flow rate is less than 0.005 standard cubic meter per minute, the total organic HAP concentration is less than 50 parts per million by volume or the total resource effectiveness index value, calculated according to §63.115 of this subpart, is greater than 1.0.

Group 1 storage vessel means a storage vessel that meets the criteria for design storage capacity and stored-liquid maximum true vapor pressure specified in table 5 of this subpart for storage vessels at existing sources, and in table 6 of this subpart for storage vessels at new sources.

Group 2 storage vessel means a storage vessel that does not meet the definition of a Group 1 storage vessel.

Group 1 transfer rack means a transfer rack that annually loads greater than or equal to 0.65 million liter of liquid products that contain organic hazardous air pollutants with a rack weighted average vapor pressure greater than or equal to 10.3 kilopascals.

Group 2 transfer rack means a transfer rack that does not meet the definition of Group 1 transfer rack.

Group 1 wastewater stream means a wastewater stream consisting of process wastewater as defined in §63.101 of subpart F at an existing or new source that meets the criteria for Group 1 status in §63.132(c) of this subpart for Table 9 compounds and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in §63.132(d) of this subpart for Table 8 compounds.

Group 2 wastewater stream means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

Halogenated vent stream or *halogenated stream* means a vent stream from a process vent or transfer operation determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms per hour or greater determined by the procedures presented in § 63.115(d)(2)(v) of this subpart.

Halogens and hydrogen halides means hydrogen chloride (HCl), chlorine (Cl₂), hydrogen bromide (HBr), bromine (Br₂), and hydrogen fluoride (HF).

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as American National Standards Institute (ANSI) B31-3.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. The above energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

Individual drain system means the stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, conveying wastewater streams or residuals. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall runoff at a facility, and which is segregated from all other individual drain systems, is excluded from this definition.

Intermittent vapor processing system means a vapor processing system that employs an intermediate vapor holder to accumulate total organic compound vapors collected from tank trucks or railcars, and treats the accumulated vapors only during automatically controlled cycles.

Internal floating roof means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel or waste management unit that has a permanently affixed roof.

Junction box means a manhole or access point to a wastewater sewer line or a lift station.

Liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel or waste management unit and the floating roof. The seal is mounted continuously around the circumference of the vessel or unit.

Loading cycle means the time period from the beginning of filling a tank truck or railcar until flow to the control device ceases, as measured by the flow indicator.

Loading rack means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total organic HAP's in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

- (1) In accordance with methods described in American Petroleum Institute Publication 2517, *Evaporative Loss From External Floating-Roof Tanks* (incorporated by reference as specified in § 63.14 of subpart A of this part); or
- (2) As obtained from standard reference texts; or

(3) As determined by the American Society for Testing and Materials Method D2879-83 (incorporated by reference as specified in §63.14 of subpart A of this part); or

(4) Any other method approved by the Administrator.

Metallic shoe seal or mechanical shoe seal means metal sheets that are held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

Non-automated monitoring and recording system means manual reading of values measured by monitoring instruments and manual transcription of those values to create a record. Non-automated systems do not include strip charts.

Oil-water separator or organic-water separator means a waste management unit, generally a tank used to separate oil or organics from water. An oil-water or organic-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water or organic-water separator include, but are not limited to, an American Petroleum Institute separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

Open biological treatment process means a biological treatment process that is not a closed biological treatment process as defined in this section.

Operating permit means a permit required by 40 CFR part 70 or part 71.

Organic hazardous air pollutant or organic HAP means any of the chemicals listed in table 2 of subpart F of this part.

Organic monitoring device means a unit of equipment used to indicate the concentration level of organic compounds exiting a recovery device based on a detection principle such as infra-

red, photoionization, or thermal conductivity.

Point of determination means each point where process wastewater exits the chemical manufacturing process unit.

NOTE to definition for point of determination: The regulation allows determination of the characteristics of a wastewater stream (1) at the point of determination or (2) downstream of the point of determination if corrections are made for changes in flow rate and annual average concentration of Table 8 or Table 9 compounds as determined in §63.144 of this subpart. Such changes include losses by air emissions; reduction of annual average concentration or changes in flow rate by mixing with other water or wastewater streams; and reduction in flow rate or annual average concentration by treating or otherwise handling the wastewater stream to remove or destroy hazardous air pollutants.

Primary fuel means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process unit has the same meaning as *chemical manufacturing process unit* as defined in this section.

Process wastewater stream means a stream that contains process wastewater as defined in §63.101 of subpart F of this part.

Product separator means phase separators, flash drums, knock-out drums, decanters, degassers, and condenser(s) including ejector-condenser(s) associated with a reactor or an air oxidation reactor.

Product tank, as used in the wastewater provisions, means a stationary unit that is designed to contain an accumulation of materials that are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. This term has the same meaning as a product storage vessel.

Product tank drawdown means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

Rack-weighted average partial pressure means the throughput weighted average of the average maximum true vapor pressure of liquids containing organic HAP transferred at a transfer rack. The rack-weighted average partial pressure shall be calculated using the equation below:

Where:

P = Rack-weighted average partial pressure, kilopascals.

$$P = \frac{\sum P_i G_i}{\sum G_i}$$

P_i = Individual HAP maximum true vapor pressure, kilopascals, = X_i*P, where X_i is the mole fraction of compound i in the liquid.

G_i = Yearly volume of each liquid that contains organic HAP that is transferred at the rack, liters.

i = Each liquid that contains HAP that is transferred at the rack.

Reactor means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed. Reactor includes the product separator and any associated vacuum pump or steam jet.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. For example, a recapture device may recover chemicals primarily for disposal. Recapture devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture

devices are considered recovery devices.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

Reference control technology for process vents means a combustion device or recapture device used to reduce organic hazardous air pollutant emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

Reference control technology for storage vessels means an internal floating roof meeting the specifications of §63.119(b) of this subpart, an external floating roof meeting the specifications of §63.119(c) of this subpart, an external floating roof converted to an internal floating roof meeting the specifications of §63.119(d) of this subpart, or a closed-vent system to a control device achieving 95-percent reduction in organic HAP emissions. For purposes of emissions averaging, these four technologies are considered equivalent.

Reference control technology for transfer racks means a combustion device, recapture device, or recovery device used to reduce organic hazardous air pollutants emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume; or a vapor balancing system.

Reference control technology for wastewater means the use of:

(1) Controls specified in §63.133 through §63.137;

(2) A steam stripper meeting the specifications of §63.138(d) of this subpart or any of the other alternative control measures specified in §63.138(b), (c), (e), (f), (g), or (h) of this subpart; and

(3) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices or for noncombustion devices controlling air emissions from waste management units other than surface impoundments or containers) the organic hazardous air pollutants emissions in the vapor streams

vented from wastewater tanks, oil-water separators, containers, surface impoundments, individual drain systems, and treatment processes (including the design steam stripper) managing wastewater.

Residual means any liquid or solid material containing Table 9 compounds that is removed from a wastewater stream by a waste management unit or treatment process that does not destroy organics (nondestructive unit). Examples of residuals from non-destructive wastewater management units are: the organic layer and bottom residue removed by a decanter or organic-water separator and the overheads from a steam stripper or air stripper. Examples of materials which are not residuals are: silt; mud; leaves; bottoms from a steam stripper or air stripper; and sludges, ash, or other materials removed from wastewater being treated by destructive devices such as biological treatment units and incinerators.

Secondary fuel means a fuel fired through a burner other than the primary fuel burner that provides supplementary heat in addition to the heat provided by the primary fuel.

Sewer line means a lateral, trunk line, branch line, or other conduit including, but not limited to, grates, trenches, etc., used to convey wastewater streams or residuals to a downstream waste management unit.

Simultaneous loading means, for a shared control device, loading of organic HAP materials from more than one transfer arm at the same time such that the beginning and ending times of loading cycles coincide or overlap and there is no interruption in vapor flow to the shared control device.

Single-seal system means a floating roof having one continuous seal that completely covers the space between the wall of the storage vessel and the edge of the floating roof. This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Specific gravity monitoring device means a unit of equipment used to monitor specific gravity and having a minimum accuracy of ± 0.02 specific gravity units.

Steam jet ejector means a steam nozzle which discharges a high-velocity jet

across a suction chamber that is connected to the equipment to be evacuated.

Surface impoundment means a waste management unit which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids. A surface impoundment is used for the purpose of treating, storing, or disposing of wastewater or residuals, and is not an injection well. Examples of surface impoundments are equalization, settling, and aeration pits, ponds, and lagoons.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a chemical manufacturing process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

Table 8 compound means a compound listed in table 8 of this subpart.

Table 9 compound means a compound listed in table 9 of this subpart.

Temperature monitoring device means a unit of equipment used to monitor temperature and having a minimum accuracy of (a) ± 1 percent of the temperature being monitored expressed in degrees Celsius ($^{\circ}\text{C}$) or (b) ± 0.5 degrees ($^{\circ}\text{C}$), whichever is greater.

The 33/50 program means a voluntary pollution prevention initiative established and administered by the EPA to encourage emissions reductions of 17 chemicals emitted in large volumes by industrial facilities. The EPA Document Number 741-K-92-001 provides more information about the 33/50 program.

Total organic compounds or *TOC*, as used in the process vents provisions, means those compounds measured according to the procedures of Method 18 of 40 CFR part 60, appendix A.

Total resource effectiveness index value or *TRE index value* means a measure of the supplemental total resource requirement per unit reduction of organic HAP associated with a process vent stream, based on vent stream flow rate, emission rate of organic HAP, net heating value, and corrosion properties

(whether or not the vent stream contains halogenated compounds), as quantified by the equations given under § 63.115 of this subpart.

Treatment process means a specific technique that removes or destroys the organics in a wastewater or residual stream such as a steam stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process applied to wastewater streams or residuals to comply with § 63.138 of this subpart. Most treatment processes are conducted in tanks. Treatment processes are a subset of waste management units.

Vapor collection system, as used in the transfer provisions, means the equipment used to collect and transport organic HAP vapors displaced during the loading of tank trucks or railcars. This does not include the vapor collection system that is part of any tank truck or railcar vapor collection manifold system.

Vapor-mounted seal means a continuous seal that completely covers the annular space between the wall of the storage vessel or waste management unit and the edge of the floating roof and is mounted such that there is a vapor space between the stored liquid and the bottom of the seal.

Vent stream, as used in the process vent provisions, means a process vent as defined in § 63.101 of subpart F of this part.

Waste management unit means the equipment, structure(s), and/or device(s) used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include: Wastewater tanks, surface impoundments, individual drain systems, and biological wastewater treatment units. Examples of equipment that may be waste management units include containers, air flotation units, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. If such equipment is used for recovery, then it is part of a chemical manufacturing process unit and is not a waste management unit.

Wastewater stream means a stream that contains only wastewater as de-

finied in § 63.101 of subpart F of this part.

Wastewater tank means a stationary waste management unit that is designed to contain an accumulation of wastewater or residuals and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. Wastewater tanks used for flow equalization are included in this definition.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 18024, 18029, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995; 62 FR 2742, Jan. 17, 1997]

§ 63.112 Emission standard.

(a) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the following equation:

$$E_A = 0.02\sum EPV_1 + \sum EPV_2 + 0.05\sum ES_1 + \sum ES_2 + 0.02\sum ETR_1 + \sum ETR_2 + \sum EWW_{1C} + \sum EWW_2$$

where:

E_A = Emission rate, megagrams per year, allowed for the source.

$0.02\sum EPV_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 process vents, as defined in § 63.111 of this subpart.

$\sum EPV_2$ = Sum of the emissions, megagrams per year, from all Group 2 process vents as defined in § 63.111 of this subpart.

$0.05\sum ES_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in § 63.111 of this subpart.

$\sum ES_2$ = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in § 63.111 of this subpart.

$0.02\sum ETR_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 transfer racks, as defined in § 63.111 of this subpart.

Σ ETR₂ = Sum of the emissions, megagrams per year, from all Group 2 transfer racks, as defined in § 63.111 of this subpart.

Σ EWW_{1C} = Sum of the residual emissions from all Group 1 wastewater streams, as defined in § 63.111 of this subpart. This term is calculated for each Group 1 stream according to the equation for EWW_{1C} in § 63.150(g)(5)(i) of this subpart.

Σ EWW₂ = Sum of emissions from all Group 2 wastewater streams, as defined in § 63.111 of this subpart.

The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point change or as the number of emission points in the source changes.

(b) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (a) of this section.

(c) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (a) of this section by following the procedures specified in paragraph (e) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (f) of this section for some emission points and the procedures specified in paragraph (e) of this section for all other emission points within the source.

(d) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (b) of this section only by following the procedures in paragraph (e) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.

(e) The owner or operator of an existing or new source may comply with the process vent provisions in §§ 63.113 through 63.118 of this subpart, the storage vessel provisions in §§ 63.119 through 63.123 of this subpart, the transfer operation provisions in §§ 63.126 through 63.130 of this subpart, the wastewater provisions in §§ 63.131 through 63.147 of this subpart, the leak inspection provisions in § 63.148, and

the provisions in § 63.149 of this subpart.

(1) The owner or operator using this compliance approach shall also comply with the requirements of § 63.151 and § 63.152 of this subpart, as applicable.

(2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (a) of this section.

(3) When emissions of different kinds (e.g., emissions from process vents, transfer operations, storage vessels, process wastewater, and/or in-process equipment subject to § 63.149 of this subpart) are combined, and at least one of the emission streams would be classified as Group 1 in the absence of combination with other emission streams, the owner or operator shall comply with the requirements of either paragraph (e)(3)(i) or paragraph (e)(3)(ii) of this section.

(i) Comply with the applicable requirements of this subpart for each kind of emissions in the stream (e.g., the requirements in §§ 63.113 through 63.118 of this subpart G for process vents, and the requirements of §§ 63.126 through 63.130 for transfer operations); or

(ii) Comply with the first set of requirements identified in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section which applies to any individual emission stream that is included in the combined stream, where either that emission stream would be classified as Group 1 in the absence of combination with other emission streams, or the owner chooses to consider that emission stream to be Group 1 for purposes of this paragraph. Compliance with the first applicable set of requirements identified in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section constitutes compliance with all other requirements in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section applicable to other types of emissions in the combined stream.

(A) The requirements of this subpart for Group 1 process vents, including applicable monitoring, recordkeeping, and reporting;

(B) The requirements of this subpart for Group 1 transfer racks, including

applicable monitoring, recordkeeping, and reporting;

(C) The requirements of § 63.119(e) for control of emissions from Group 1 storage vessels, including monitoring, recordkeeping, and reporting;

(D) The requirements of § 63.139 for control devices used to control emissions from waste management units, including applicable monitoring, recordkeeping, and reporting; or

(E) The requirements of § 63.139 for closed vent systems for control of emissions from in-process equipment subject to § 63.149, including applicable monitoring, recordkeeping, and reporting.

(f) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under §§ 63.113 through 63.148 of this subpart by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (a) of this section. The owner or operator using emissions averaging must meet the requirements in paragraphs (f)(1) and (f)(2) of this section.

(1) Calculate emission debits and credits for those emission points involved in the emissions average as specified in § 63.150 of this subpart; and

(2) Comply with the requirements of § 63.151 and § 63.152 of this subpart, as applicable.

(g) A State may restrict the owner or operator of an existing source to using only the procedures in paragraph (e) of this section to comply with the emission standard in paragraph (a) of this section.

(h) Where the provisions of this subpart require a performance test, waiver of that requirement shall be addressed only as provided in § 63.103(b)(5) of subpart F of this part.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2744, Jan. 17, 1997]

§ 63.113 Process vent provisions—reference control technology.

(a) The owner or operator of a Group 1 process vent as defined in this subpart shall comply with the requirements of paragraph (a)(1), (a)(2), or (a)(3) of this section.

(1) Reduce emissions of organic HAP using a flare.

(i) The flare shall comply with the requirements of § 63.11(b) of subpart A of this part.

(ii) Halogenated vent streams, as defined in § 63.111 of this subpart, shall not be vented to a flare.

(2) Reduce emissions of total organic hazardous air pollutants by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen, and compliance can be determined by measuring either organic hazardous air pollutants or total organic carbon using the procedures in § 63.116 of this subpart.

(i) Compliance with paragraph (a)(2) of this section may be achieved by using any combination of combustion, recovery, and/or recapture devices, except that a recovery device may not be used to comply with paragraph (a)(2) of this section by reducing emissions of total organic hazardous air pollutants by 98 weight-percent, except as provided in paragraph (a)(2)(ii) of this section.

(ii) An owner or operator may use a recovery device, alone or in combination with one or more combustion or recapture devices, to reduce emissions of total organic hazardous air pollutants by 98 weight-percent if all the conditions of paragraphs (a)(2)(ii)(A) through (a)(2)(ii)(D) of this section are met.

(A) The recovery device (and any combustion device or recapture device which operates in combination with the recovery device to reduce emissions of total organic hazardous air pollutants by 98 weight-percent) was installed before the date of proposal of the subpart of this part 63 that makes this subpart G applicable to process vents in the chemical manufacturing process unit.

(B) The recovery device that will be used to reduce emissions of total organic hazardous air pollutants by 98 weight-percent is the last recovery device before emission to the atmosphere.

(C) The recovery device, alone or in combination with one or more combustion or recapture devices, is capable of reducing emissions of total organic hazardous air pollutants by 98 weight-percent, but is not capable of reliably reducing emissions of total organic hazardous air pollutants to a concentration of 20 parts per million by volume.

(D) If the owner or operator disposed of the recovered material, the recovery device would comply with the requirements of this subpart for recapture devices.

(3) Achieve and maintain a TRE index value greater than 1.0 at the outlet of the final recovery device, or prior to release of the vent stream to the atmosphere if no recovery device is present. If the TRE index value is greater than 1.0, the vent shall comply with the provisions for a Group 2 process vent specified in either paragraph (d) or (e) of this section, whichever is applicable.

(b) If a boiler or process heater is used to comply with the percent reduction requirement or concentration limit specified in paragraph (a)(2) of this section, then the vent stream shall be introduced into the flame zone of such a device.

(c) Halogenated Group 1 process vent streams that are combusted shall be controlled according to paragraph (c)(1) or (c)(2) of this section.

(1) If a combustion device is used to comply with paragraph (a)(2) of this section for a halogenated vent stream, then the vent stream exiting the combustion device shall be ducted to a halogen reduction device, including but not limited to a scrubber, before it is discharged to the atmosphere.

(i) Except as provided in paragraph (c)(1)(ii) of this section, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111 of this subpart, by 99 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilogram per hour, whichever is less stringent.

(ii) If a scrubber or other halogen reduction device was installed prior to December 31, 1992, the device shall reduce overall emissions of hydrogen

halides and halogens, as defined in § 63.111 of this subpart, by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour, whichever is less stringent.

(2) A halogen reduction device, such as a scrubber or other technique, may be used to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour prior to any combustion control device, and thus make the vent stream nonhalogenated; the vent stream must comply with the requirements of paragraph (a)(1) or (a)(2) of this section.

(d) The owner or operator of a Group 2 process vent having a flow rate greater than or equal to 0.005 standard cubic meter per minute, a HAP concentration greater than or equal to 50 parts per million by volume, and a TRE index value greater than 1.0 but less than or equal to 4.0 shall maintain a TRE index value greater than 1.0 and shall comply with the monitoring of recovery device parameters in § 63.114(b) or (c) of this subpart, the TRE index calculations of § 63.115 of this subpart, and the applicable reporting and recordkeeping provisions of §§ 63.117 and 63.118 of this subpart. Such owner or operator is not subject to any other provisions of §§ 63.114 through 63.118 of this subpart.

(e) The owner or operator of a Group 2 process vent with a TRE index greater than 4.0 shall maintain a TRE index value greater than 4.0, comply with the provisions for calculation of TRE index in § 63.115 of this subpart and the reporting and recordkeeping provisions in § 63.117(b) of this subpart, § 63.118(c) of this subpart, and § 63.118(h) of this subpart, and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118 of this subpart.

(f) The owner or operator of a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute shall maintain a flow rate less than 0.005 standard cubic meter per minute; comply with the Group determination procedures in § 63.115 (a), (b), and (e) of this subpart; and the reporting and recordkeeping requirements in § 63.117(c) of this subpart, § 63.118(d) of this subpart, and § 63.118(i) of this subpart; and is not subject to monitoring

or any other provisions of §§ 63.114 through 63.118 of this subpart.

(g) The owner or operator of a Group 2 process vent with a concentration less than 50 parts per million by volume; shall maintain a concentration less than 50 parts per million by volume; comply with the Group determination procedures in § 63.115 (a), (c), and (e) of this subpart; the reporting and recordkeeping requirements in § 63.117(d) of this subpart, § 63.118(e) of this subpart, and § 63.118(j) of this subpart; and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118 of this subpart.

(h) The owner or operator of a process vent complying with paragraph (a)(1) or (a)(2) of this section is not required to perform the group determination described in § 63.115 of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2745, Jan. 17, 1997]

§ 63.114 Process vent provisions—monitoring requirements.

(a) Each owner or operator of a process vent that uses a combustion device to comply with the requirements in § 63.113 (a)(1) or (a)(2) of this subpart, or that uses a recovery device or recapture device to comply with the requirements in § 63.113(a)(2) of this subpart, shall install monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), (a)(4), or (a)(5) of this section, depending on the type of device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream im-

mediately before and after the catalyst bed.

(2) Where a flare is used, the following monitoring equipment is required: A device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame.

(3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, the following monitoring equipment is required: A temperature monitoring device in the firebox equipped with a continuous recorder. Any boiler or process heater in which all vent streams are introduced with primary fuel or are used as the primary fuel is exempt from this requirement.

(4) Where a scrubber is used with an incinerator, boiler, or process heater in the case of halogenated vent streams, the following monitoring equipment is required for the scrubber.

(i) A pH monitoring device equipped with a continuous recorder shall be installed to monitor the pH of the scrubber effluent.

(ii) A flow meter equipped with a continuous recorder shall be located at the scrubber influent for liquid flow. Gas stream flow shall be determined using one of the procedures specified in paragraphs (a)(4)(ii)(A) through (a)(4)(ii)(C) of this section.

(A) The owner or operator may determine gas stream flow using the design blower capacity, with appropriate adjustments for pressure drop.

(B) If the scrubber is subject to regulations in 40 CFR parts 264 through 266 that have required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for this subpart specified in § 63.100(k) of subpart F of this part, the owner or operator may determine gas stream flow by the method that had been utilized to comply with those regulations. A determination that was conducted prior to the compliance date for this subpart may be utilized to comply with this subpart if it is still representative.

(C) The owner or operator may prepare and implement a gas stream flow determination plan that documents an appropriate method which will be used to determine the gas stream flow. The

plan shall require determination of gas stream flow by a method which will at least provide a value for either a representative or the highest gas stream flow anticipated in the scrubber during representative operating conditions other than start-ups, shutdowns, or malfunctions. The plan shall include a description of the methodology to be followed and an explanation of how the selected methodology will reliably determine the gas stream flow, and a description of the records that will be maintained to document the determination of gas stream flow. The owner or operator shall maintain the plan as specified in § 63.103(c).

(5) Where a recovery device or recapture device is used to comply with the requirements of § 63.113(a)(2) of this subpart, the owner or operator shall utilize the appropriate monitoring device identified in paragraph (b), (b)(1), (b)(2), or (b)(3) of this section.

(b) Each owner or operator of a process vent with a TRE index value greater than 1.0 as specified under § 63.113(a)(3) or § 63.113(d) of this subpart that uses one or more recovery devices shall install either an organic monitoring device equipped with a continuous recorder or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. Monitoring is not required for process vents with TRE index values greater than 4.0 as specified in § 63.113(e) of this subpart.

(1) Where an absorber is the final recovery device in the recovery system, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each equipped with a continuous recorder shall be used;

(2) Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used;

(3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration

stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle shall be used.

(c) An owner or operator of a process vent may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) or § 63.152(e) of this subpart. Approval shall be requested if the owner or operator:

(1) Uses a combustion device other than an incinerator, boiler, process heater, or flare; or

(2) Maintains a TRE greater than 1.0 but less than or equal to 4.0 without a recovery device or with a recovery device other than the recovery devices listed in paragraphs (a) and (b) of this section; or

(3) Uses one of the combustion or recovery or recapture devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this section.

(d) The owner or operator of a process vent using a vent system that contains bypass lines that could divert a vent stream away from the control device used to comply with § 63.113 (a)(1) or (a)(2) of this subpart shall comply with paragraph (d)(1) or (d)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3) of this subpart. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the non-diverting position with a car-

seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line.

(e) The owner or operator shall establish a range that indicates proper operation of the control or recovery device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the information required in § 63.152(b) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment. The range may be based upon a prior performance test conducted for determining compliance with a regulation promulgated by the EPA, and the owner or operator is not required to conduct a performance test under § 63.116 of this subpart, if the prior performance test was conducted using the same methods specified in § 63.116 and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2745, Jan. 17, 1997]

§ 63.115 Process vent provisions—methods and procedures for process vent group determination.

(a) For purposes of determining process vent stream flow rate, total organic hazardous air pollutants or total organic carbon concentration or TRE index value, as specified under paragraph (b), (c), or (d) of this section, the sampling site shall be after the last recovery device (if any recovery devices are present) but prior to the inlet of any control device that is present and prior to release to the atmosphere.

(1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(b) To demonstrate that a process vent stream flow rate is less than 0.005 standard cubic meter per minute in accordance with the Group 2 process vent definition of this subpart, the owner or operator shall measure flow rate by the following procedures:

(1) The sampling site shall be selected as specified in paragraph (a) of this section.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(c) Each owner or operator seeking to demonstrate that a process vent stream has an organic HAP concentration below 50 parts per million by volume in accordance with the Group 2 process vent definition of this subpart shall measure either total organic HAP or TOC concentration using the following procedures:

(1) The sampling site shall be selected as specified in paragraph (a) of this section.

(2) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used.

(3) Where Method 18 of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume concentration:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(ii) The concentration of either TOC (minus methane and ethane) or organic HAP shall be calculated according to paragraph (c)(3)(ii)(A) or (c)(3)(ii)(B) of this section as applicable.

(A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{\text{TOC}} = \frac{\sum_{i=1}^x \left(\sum_{j=1}^n C_{ji} \right)}{X}$$

where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

C_{ji} = Concentration of sample component j of the sample i , dry basis, parts per million by volume.

n = Number of components in the sample.

x = Number of samples in the sample run.

(B) The total organic HAP concentration (C_{HAP}) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(4) Where Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume TOC concentration:

(i) Method 25A of 40 CFR part 60, appendix A shall be used only if a single organic HAP compound is greater than 50 percent of total organic HAP, by volume, in the process vent stream.

(ii) The process vent stream composition may be determined by either process knowledge, test data collected using an appropriate EPA method or a method or data validated according to the protocol in Method 301 of appendix A of this part. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current process vent stream conditions.

(iii) The organic HAP used as the calibration gas for Method 25A of 40 CFR part 60, appendix A shall be the single organic HAP compound present at greater than 50 percent of the total organic HAP by volume.

(iv) The span value for Method 25A of 40 CFR part 60, appendix A shall be 50 parts per million by volume.

(v) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A of 40 CFR part 60, appendix A is below 25 parts per million by volume to be considered a Group 2 vent with an organic HAP concentration below 50 parts per million by volume and to qualify for the low concentration exclusion in § 63.113(g) of this subpart.

(d) To determine the TRE index value, the owner or operator shall conduct a TRE determination and calculate the TRE index value according to the procedures in paragraph (d)(1) or (d)(2) of this section and the TRE equation in paragraph (d)(3) of this section.

(1) Engineering assessment may be used to determine process vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate for the representative operating condition expected to yield the lowest TRE index value.

(i) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is greater than 4.0, then the owner or operator is not required to perform the measurements specified in paragraph (d)(2) of this section.

(ii) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is less than or equal to 4.0, then the owner or operator is required to perform the measurements specified in paragraph (d)(2) of this section for group determination or consider the process vent a Group 1 vent and comply with the emission reduction specified in § 63.113(a) of this subpart.

(iii) Engineering assessment includes, but is not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process

under representative operating conditions.

(C) Maximum flow rate, TOC emission rate, organic HAP emission rate, or net heating value limit specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(3) Estimation of TOC or organic HAP concentrations based on saturation conditions,

(4) Estimation of maximum expected net heating value based on the stream concentration of each organic compound or, alternatively, as if all TOC in the stream were the compound with the highest heating value.

(E) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(2) Except as provided in paragraph (d)(1) of this section, process vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate shall be measured and calculated according to the procedures in paragraphs (d)(2)(i) through (d)(2)(v) of this section and used as input to the TRE index value calculation in paragraph (d)(3) of this section.

(i) The vent stream volumetric flow rate (Q_s), in standard cubic meters per minute at 20 °C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. If the vent stream tested passes through a final steam jet ejector and is not condensed, the stream volumetric flow shall be corrected to 2.3 percent moisture.

(ii) The molar composition of the process vent stream, which is used to calculate net heating value, shall be determined using the following methods:

(A) Method 18 of 40 CFR part 60, appendix A to measure the concentration of each organic compound.

(B) American Society for Testing and Materials D1946-77 to measure the concentration of carbon monoxide and hydrogen.

(C) Method 4 of 40 CFR part 60, appendix A to measure the moisture content of the stack gas.

(iii) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \left(\sum_{j=1}^n C_j H_j \right) (1 - B_{ws})$$

where:

H_T =Net heating value of the sample, megaJoule per standard cubic meter, where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of Q_s (vent stream flow rate).

K_1 =Constant, 1.740×10^{-7} (parts per million)⁻¹ (gram-mole per standard cubic meter) (megaJoule per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

B_{ws} =Water vapor content of the vent stream, proportion by volume; except that if the vent stream passes through a final steam jet and is not condensed, it shall be assumed that $B_{ws}=0.023$ in order to correct to 2.3 percent moisture.

C_j =Concentration on a dry basis of compound j in parts per million, as measured for all organic compounds by Method 18 of 40 CFR part 60, appendix A and measured for hydrogen and carbon monoxide by American Society for Testing and Materials D1946-77 as indicated in paragraph (d)(2)(ii) of this section.

H_j =Net heat of combustion of compound j, kilocalorie per gram-mole, based on combustion at 25 °C and 760 millimeters mercury. The heats of combustion of vent stream components shall be determined using American Society for Testing and Materials D2382-76 if published values are not available or cannot be calculated.

(iv) The emission rate of TOC (minus methane and ethane) (E_{TOC}) and the emission rate of total organic HAP (E_{HAP}) in the vent stream shall both be calculated using the following equation:

$$E = K_2 \left[\sum_{j=1}^n C_j M_j \right] Q_s$$

where:

E =Emission rate of TOC (minus methane and ethane) or emission rate of total organic HAP in the sample, kilograms per hour.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20°C.

C_j =Concentration on a dry basis of organic compound j in parts per million as measured by Method 18 of 40 CFR part 60, appendix A as indicated in paragraph (d)(2)(ii) of this section. If the TOC emission rate is being calculated, C_j includes all organic compounds measured minus methane and ethane; if the total organic HAP emission rate is being calculated, only organic HAP compounds listed in table 2 in subpart F of this part are included.

M_j =Molecular weight of organic compound j , gram/gram-mole.

Q_s =Vent stream flow rate, dry standard cubic meter per minute, at a temperature of 20°C.

(v) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.

(A) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume, by compound) shall be determined based on the following procedures:

(1) Process knowledge that no halogen or hydrogen halides are present in the process, or

(2) Applicable engineering assessment as discussed in paragraph (d)(1)(iii) of this section, or

(3) Concentration of organic compounds containing halogens measured by Method 18 of 40 CFR part 60, appendix A, or

(4) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(B) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 Q \left(\sum_{j=1}^n \sum_{i=1}^m C_j * L_{j,i} * M_{j,i} \right)$$

where:

E =mass of halogen atoms, dry basis, kilogram per hour.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20°C.

C_j =Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

$M_{j,i}$ =Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

$L_{j,i}$ =Number of atoms of halogen i in compound j of the gas stream.

Q =Flow rate of gas stream, dry standard cubic meters per minute, determined according to paragraph (d)(1) or (d)(2)(i) of this section.

j =Halogenated compound j in the gas stream.

i =Halogen atom i in compound j of the gas stream.

n =Number of halogenated compounds j in the gas stream.

m =Number of different halogens i in each compound j of the gas stream.

(3) The owner or operator shall calculate the TRE index value of the vent stream using the equations and procedures in this paragraph.

(i) The equation for calculating the TRE index for a vent stream controlled by a flare or incinerator is as follows:

$$\text{TRE} = \frac{1}{E_{\text{HAP}}} \left[a + b(Q_s) + c(H_T) + d(E_{\text{TOC}}) \right]$$

where:

TRE=TRE index value.

E_{HAP} =Hourly emission rate of total organic HAP, kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section.

Q_s =Vent stream flow rate, standard cubic meters per minute, at a standard temperature of 20 °C, as calculated in paragraph (d)(1) or (d)(2)(i) of this section.

H_T =Vent stream net heating value, megaJoules per standard cubic meter, as calculated in paragraph (d)(1) or (d)(2)(iii) of this section.

E_{TOC} =Emission rate of TOC (minus methane and ethane), kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section.

a,b,c,d=Coefficients presented in table 1 of this subpart, selected in accordance with paragraphs (d)(3)(ii) and (iii) of this section.

(ii) The owner or operator of a non-halogenated vent stream shall calculate the TRE index value based on the use of a flare, a thermal incinerator with 0 percent heat recovery, and a thermal incinerator with 70 percent heat recovery and shall select the lowest TRE index value. The owner or operator shall use the applicable coefficients in table 1 of this subpart for nonhalogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for nonhalogenated vent streams located within new sources.

(iii) The owner or operator of a halogenated vent stream shall calculate the TRE index value based on the use of a thermal incinerator with 0 percent heat recovery, and a scrubber. The owner or operator shall use the applicable coefficients in table 1 of this subpart for halogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for halogenated vent streams located within new sources.

(e) The owner or operator of a Group 2 process vent shall recalculate the

TRE index value, flow, or organic hazardous air pollutants concentration for each process vent, as necessary to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE calculation was based.

(1) The TRE index value, flow rate, or organic HAP concentration shall be recalculated based on measurements of vent stream flow rate, TOC, and organic HAP concentrations, and heating values as specified in §63.115 (a), (b), (c), and (d) of this subpart, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (d)(1) of this section.

(2) Where the recalculated TRE index value is less than or equal to 1.0, or less than or equal to 4.0 but greater than 1.0, the recalculated flow rate is greater than or equal to 0.005 standard cubic meter per minute, or the recalculated concentration is greater than or equal to 50 parts per million by volume, the owner or operator shall submit a report as specified in §63.118 (g), (h), (i), or (j) of this subpart and shall comply with the appropriate provisions in §63.113 of this subpart by the dates specified in §63.100 of subpart F of this part.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2746, Jan. 17, 1997]

§63.116 Process vent provisions—performance test methods and procedures to determine compliance.

(a) When a flare is used to comply with §63.113(a)(1) of this subpart, the

owner or operator shall comply with the flare provisions in §63.11(b) of subpart A of this part.

(1) The compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

(2) An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration when a flare is used.

(b) An owner or operator is not required to conduct a performance test when any control device specified in paragraphs (b)(1) through (b)(5) of this section is used.

(1) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) A boiler or process heater into which the process vent stream is introduced with the primary fuel or is used as the primary fuel.

(3) A control device for which a performance test was conducted for determining compliance with a regulation promulgated by the EPA and the test was conducted using the same methods specified in this section and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes.

(4) A boiler or process heater burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(5) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(c) Except as provided in paragraphs (a) and (b) of this section, an owner or operator using a control device to comply with the organic HAP concentration limit or percent reduction effi-

ciency requirements in §63.113(a)(2) of this subpart shall conduct a performance test using the procedures in paragraphs (c)(1) through (c)(4) of this section. The organic HAP concentration and percent reduction may be measured as either total organic HAP or as TOC minus methane and ethane according to the procedures specified.

(1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites.

(i) For determination of compliance with the 98 percent reduction of total organic HAP requirement of §63.113(a)(2) of this subpart, sampling sites shall be located at the inlet of the control device as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section, and at the outlet of the control device.

(A) The control device inlet sampling site shall be located after the final product recovery device.

(B) If a process vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) For determination of compliance with the 20 parts per million by volume total organic HAP limit in §63.113(a)(2) of this subpart, the sampling site shall be located at the outlet of the control device.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) To determine compliance with the 20 parts per million by volume total organic HAP limit in §63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A to measure either TOC minus methane and ethane or total organic HAP. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part, may be used. The following procedures shall be used to calculate parts per

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million by volume concentration, corrected to 3 percent oxygen:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(ii) The concentration of either TOC (minus methane or ethane) or total organic HAP shall be calculated according to paragraph (c)(3)(ii)(A) or (c)(3)(ii)(B) of this section.

(A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{\text{TOC}} = \sum_{i=1}^x \frac{\left(\sum_{j=1}^n C_{ji} \right)}{x}$$

where:

C_{TOC} =Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

C_{ji} =Concentration of sample components j of sample i, dry basis, parts per million by volume.

n=Number of components in the sample.

x=Number of samples in the sample run.

(B) The total organic HAP concentration (C_{HAP}) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iii) The concentration of TOC or total organic HAP shall be corrected to 3 percent oxygen if a combustion device is the control device.

(A) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration ($\%O_{2d}$). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic HAP samples are taken.

(B) The concentration corrected to 3 percent oxygen (C_c) shall be computed using either of the following equations:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

C_c =Concentration of TOC or organic HAP corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m =Concentration of TOC (minus methane and ethane) or organic HAP, dry basis, parts per million by volume.

$\%O_{2d}$ =Concentration of oxygen, dry basis, percent by volume.

(4) To determine compliance with the 98 percent reduction requirement of § 63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A; alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part may be used. The following procedures shall be used to calculate percent reduction efficiency:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time such as 15 minute intervals during the run.

(ii) The mass rate of either TOC (minus methane and ethane) or total organic HAP (E_i , E_o) shall be computed.

(A) The following equations shall be used:

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij} , C_{oj} =Concentration of sample component j of the gas stream at the inlet

and outlet of the control device, respectively, dry basis, parts per million by volume.

E_i , E_o =Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

M_{ij} , M_{oj} =Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o =Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

(B) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by Method 18 of 40 CFR part 60, appendix A are summed using the equation in paragraph (c)(4)(ii)(A) of this section.

(C) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using the equation in paragraph (c)(4)(ii)(A) of this section. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iii) The percent reduction in TOC (minus methane and ethane) or total organic HAP shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100)$$

where:

R =Control efficiency of control device, percent.

E_i =Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

E_o =Mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph

(c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

(iv) If the process vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic HAP or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total organic HAP in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total organic HAP exiting the combustion device, respectively.

(d) An owner or operator using a combustion device followed by a scrubber or other halogen reduction device to control halogenated process vent streams in compliance with § 63.113(c)(1) shall conduct a performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens.

(1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other halogen reduction device used to reduce halogen emissions. For an owner or operator determining compliance with the less than 0.45 kilogram per hour outlet emission limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other halogen reduction device and prior to any releases to the atmosphere.

(2) Except as provided in paragraph (d)(5) of this section, Method 26 or Method 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration, in milligrams per dry standard cubic meter, of total hydrogen halides and halogens that may be present in the vent stream. The mass emissions of each hydrogen halide and halogen compound shall be calculated from the measured concentrations and the gas stream flow rate.

(3) To determine compliance with the percent removal efficiency, the mass emissions for any hydrogen halides and halogens present at the inlet of the

scrubber or other halogen reduction device shall be summed together. The mass emissions of the compounds present at the outlet of the scrubber or other halogen reduction device shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.

(4) To demonstrate compliance with the less than 0.45 kilogram per hour outlet emission limit, the test results must show that the mass emission rate of total hydrogen halides and halogens measured at the outlet of the scrubber or other halogen reduction device is below 0.45 kilogram per hour.

(5) The owner or operator may use any other method to demonstrate compliance if the method or data has been validated according to the applicable procedures of Method 301 of appendix A of this part.

(e) An owner or operator using a scrubber or other halogen reduction device to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour prior to a combustion control device in compliance with § 63.113(c)(2) of this subpart shall determine the halogen atom mass emission rate prior to the combustor according to the procedures in § 63.115(d)(2)(v) of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2746, Jan. 17, 1997]

§ 63.117 Process vent provisions—reporting and recordkeeping requirements for group and TRE determinations and performance tests.

(a) Each owner or operator subject to the control provisions for Group 1 vent streams in § 63.113(a) of this subpart or the provisions for Group 2 vent streams with a TRE index value greater than 1.0 but less than or equal to 4.0 in § 63.113(d) of this subpart shall:

(1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(8) of this section, as applicable, and

(2) Include the data in paragraphs (a)(4) through (a)(8) of this section in the Notification of Compliance Status report as specified in § 63.152(b) of this subpart.

(3) If any subsequent TRE determinations or performance tests are con-

ducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(8) of this section in the next Periodic Report as specified in § 63.152(c) of this subpart.

(4) Record and report the following when using a combustion device to achieve a 98 weight percent reduction in organic HAP or an organic HAP concentration of 20 parts per million by volume, as specified in § 63.113(a)(2) of this subpart:

(i) The parameter monitoring results for incinerators, catalytic incinerators, boilers or process heaters specified in table 3 of this subpart, and averaged over the same time period of the performance testing.

(ii) For an incinerator, the percent reduction of organic HAP or TOC achieved by the incinerator determined as specified in § 63.116(c) of this subpart, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.116(c) of this subpart at the outlet of the incinerator on a dry basis corrected to 3 percent oxygen.

(iii) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(iv) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the process vent stream is introduced with combustion air or used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.116(c) of this subpart at the outlet of the combustion device on a dry basis corrected to 3 percent oxygen.

(5) Record and report the following when using a flare to comply with § 63.113(a)(1) of this subpart:

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.116(a) of this subpart; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(6) Record and report the following when using a scrubber following a combustion device to control a halogenated process vent stream:

(i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens as specified in § 63.116(d) of this subpart;

(ii) The pH of the scrubber effluent; and

(iii) The scrubber liquid to gas ratio.

(7) Record and report the following when achieving and maintaining a TRE index value greater than 1.0 but less than 4.0 as specified in § 63.113(a)(3) or § 63.113(d) of this subpart:

(i) The parameter monitoring results for absorbers, condensers, or carbon adsorbers, as specified in table 4 of this subpart, and averaged over the same time period of the measurements of vent stream flow rate and concentration used in the TRE determination (both measured while the vent stream is normally routed and constituted), and

(ii) The measurements and calculations performed to determine the TRE index value of the vent stream.

(8) Record and report the halogen concentration in the process vent stream determined according to the procedures specified in § 63.115(d)(2)(v) of this subpart.

(b) The owner or operator of a Group 2 process vent with a TRE index greater than 4.0 as specified in § 63.113(e) of this subpart, shall maintain records and submit as part of the Notification of Compliance Status specified in § 63.152 of this subpart, measurements, engineering assessments, and calculations performed to determine the TRE index value of the vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in § 63.115(d)(1) of this subpart.

(c) Each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on a flow rate less than 0.005 standard cubic meter per minute must submit to the Administrator the flow rate measurement using methods and procedures

specified in § 63.115 (a) and (b) of this subpart with the Notification of Compliance Status specified in § 63.152 of this subpart.

(d) Each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on organic HAP or TOC concentration less than 50 parts per million by volume must submit to the Administrator an organic HAP or TOC concentration measurement using the methods and procedures specified in § 63.115 (a) and (c) of this subpart with the Notification of Compliance Status specified in § 63.152 of this subpart.

(e) If an owner or operator uses a control or recovery device other than those listed in tables 3 and 4 of this subpart or requests approval to monitor a parameter other than those specified in tables 3 and 4 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under § 63.151(f) or § 63.152(e) of this subpart. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(f) For each parameter monitored according to tables 3 or 4 of this subpart or paragraph (e) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control or recovery device. In order to establish the range, the information required in § 63.152(b) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996]

§ 63.118 Process vent provisions—periodic reporting and recordkeeping requirements.

(a) Each owner or operator using a control device to comply with § 63.113 (a)(1) or (a)(2) of this subpart shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under § 63.114(a) of this subpart and listed in table 3 of this

subpart or specified by the Administrator in accordance with § 63.114(c) and § 63.117(e) of this subpart. For flares, the hourly records and records of pilot flame outages specified in table 3 of this subpart shall be maintained in place of continuous records.

(2) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 63.152(f). For flares, records of the times and duration of all periods during which all pilot flames are absent shall be kept rather than daily averages.

(3) Hourly records of whether the flow indicator specified under § 63.114(d)(1) of this subpart was operating and whether flow was detected at any time under the hour, as well as records of the times and durations of all periods when the vent stream is diverted from the control device or the monitor is not operating.

(4) Where a seal mechanism is used to comply with § 63.114(d)(2) of this subpart, hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.

(b) Each owner or operator using a recovery device or other means to achieve and maintain a TRE index value greater than 1.0 but less than 4.0 as specified in § 63.113(a)(3) or § 63.113(d) of this subpart shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under § 63.114(b) of this subpart and listed in table 4 of this subpart or specified by the Administrator in accordance with § 63.114(c) of this subpart and § 63.114(e) of this subpart and

(2) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 63.152(f). If carbon adsorber regen-

eration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 4 of this subpart shall be kept instead of the daily averages.

(c) Each owner or operator subject to the provisions of this subpart and who elects to demonstrate compliance with the TRE index value greater than 4.0 under § 63.113(e) of this subpart or greater than 1.0 under § 63.113(a)(3) or § 63.113(d) of this subpart shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in § 63.115(e) of this subpart; and

(2) Any recalculation of the TRE index value pursuant to § 63.115(e) of this subpart.

(d) Each owner or operator who elects to comply by maintaining a flow rate less than 0.005 standard cubic meter per minute under § 63.113(f) of this subpart, shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in § 63.115(e) of this subpart that increase the vent stream flow rate,

(2) Any recalculation or measurement of the flow rate pursuant to § 63.115(e) of this subpart, and

(3) If the flow rate increases to 0.005 standard cubic meter per minute or greater as a result of the process change, the TRE determination performed according to the procedures of § 63.115(d) of this subpart.

(e) Each owner or operator who elects to comply by maintaining an organic HAP concentration less than 50 parts per million by volume organic HAP concentration under § 63.113(g) of this subpart shall keep up-to-date, readily accessible records of:

(1) Any process changes as defined in § 63.115(e) of this subpart that increase the organic HAP concentration of the process vent stream,

(2) Any recalculation or measurement of the concentration pursuant to § 63.115(e) of this subpart, and

(3) If the organic HAP concentration increases to 50 parts per million by volume or greater as a result of the process change, the TRE determination performed according to the procedures of § 63.115(d) of this subpart.

(f) Each owner or operator who elects to comply with the requirements of § 63.113 of this subpart shall submit to

the Administrator Periodic Reports of the following recorded information according to the schedule in §63.152 of this subpart.

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values recorded under paragraphs (a) and (b) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(2) For Group 1 points, reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data as defined in §63.152(c)(2)(ii)(A) of this subpart.

(3) Reports of the times and durations of all periods recorded under paragraph (a)(3) of this section when the vent stream is diverted from the control device through a bypass line.

(4) Reports of all periods recorded under paragraph (a)(4) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

(5) Reports of the times and durations of all periods recorded under paragraph (a)(2)(v) of this section in which all pilot flames of a flare were absent.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (b)(2)(v) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(g) Whenever a process change, as defined in §63.115(e) of this subpart, is made that causes a Group 2 process vent to become a Group 1 process vent, the owner or operator shall submit a report within 180 calendar days after the process change as specified in §63.151(j) of this subpart. The report shall include:

(1) A description of the process change;

(2) The results of the recalculation of the flow rate, organic HAP concentration, and TRE index value required under §63.115(e) of this subpart and recorded under paragraph (c), (d), or (e) of this section; and

(3) A statement that the owner or operator will comply with the provisions of §63.113 of this subpart for Group 1

process vents by the dates specified in subpart F of this part.

(h) Whenever a process change, as defined in §63.115(e) of this subpart, is made that causes a Group 2 process vent with a TRE greater than 4.0 to become a Group 2 process vent with a TRE less than 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:

(1) A description of the process change,

(2) The results of the recalculation of the TRE index value required under §63.115(e) of this subpart and recorded under paragraph (c) of this section, and

(3) A statement that the owner or operator will comply with the requirements specified in §63.113(d) of this subpart.

(i) Whenever a process change, as defined in §63.115(e) of this subpart, is made that causes a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute to become a Group 2 process vent with a flow rate of 0.005 standard cubic meter per minute or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:

(1) A description of the process change,

(2) The results of the recalculation of the flow rate and the TRE determination required under §63.115(e) of this subpart and recorded under paragraph (d) of this section, and

(3) A statement that the owner or operator will comply with the requirements specified in §63.113(d) of this subpart.

(j) Whenever a process change, as defined in §63.115(e) of this subpart, is made that causes a Group 2 process vent with an organic HAP concentration less than 50 parts per million by volume to become a Group 2 process vent with an organic HAP concentration of 50 parts per million by volume or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180

calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:

(1) A description of the process change,

(2) The results of the recalculation of the organic HAP concentration and the TRE determination required under § 63.115(e) of this subpart and recorded under paragraph (e) of this section, and

(3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d) of this subpart.

(k) The owner or operator is not required to submit a report of a process change if one of the conditions listed in paragraph (k)(1), (k)(2), (k)(3), or (k)(4) of this section is met.

(1) The process change does not meet the definition of a process change in § 63.115(e) of this subpart, or

(2) The vent stream flow rate is recalculated according to § 63.115(e) of this subpart and the recalculated value is less than 0.005 standard cubic meter per minute, or

(3) The organic HAP concentration of the vent stream is recalculated according to § 63.115(e) of this subpart and the recalculated value is less than 50 parts per million by volume, or

(4) The TRE index value is recalculated according to § 63.115(e) of this subpart and the recalculated value is greater than 4.0.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2747, Jan. 17, 1997]

§ 63.119 Storage vessel provisions—reference control technology.

(a) For each storage vessel to which this subpart applies, the owner or operator shall comply with the requirements of paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this section according to the schedule provisions of § 63.100 of subpart F of this part.

(1) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 for new sources) storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is less than 76.6 kilopascals, the owner or operator shall reduce hazardous air pollutants emissions to the atmosphere either by

operating and maintaining a fixed roof and internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed vent system and control device, or routing the emissions to a process or a fuel gas system in accordance with the requirements in paragraph (b), (c), (d), (e), or (f) of this section, or equivalent as provided in § 63.121 of this subpart.

(2) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of this subpart for new sources) storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is greater than or equal to 76.6 kilopascals, the owner or operator shall operate and maintain a closed vent system and control device meeting the requirements specified in paragraph (e) of this section, or route the emissions to a process or a fuel gas system as specified in paragraph (f) of this section, or equivalent as provided in § 63.121 of this subpart.

(3) For each Group 2 storage vessel that is not part of an emissions average as described in § 63.150 of this subpart, the owner or operator shall comply with the recordkeeping requirement in § 63.123(a) of this subpart and is not required to comply with any other provisions in §§ 63.119 through 63.123 of this subpart.

(4) For each Group 2 storage vessel that is part of an emissions average, the owner or operator shall comply with the emissions averaging provisions in § 63.150 of this subpart.

(b) The owner or operator who elects to use a fixed roof and an internal floating roof, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section.

NOTE: The intent of paragraphs (b)(1) and (b)(2) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or

in pools due to floor irregularity are considered completely empty.

(1) The internal floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) During the initial fill.

(ii) After the vessel has been completely emptied and degassed.

(iii) When the vessel is completely emptied before being subsequently refilled.

(2) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(3) Each internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. Except as provided in paragraph (b)(3)(iv) of this section, the closure device shall consist of one of the devices listed in paragraph (b)(3)(i), (b)(3)(ii), or (b)(3)(iii) of this section.

(i) A liquid-mounted seal as defined in § 63.111 of this subpart.

(ii) A metallic shoe seal as defined in § 63.111 of this subpart.

(iii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous seals.

(iv) If the internal floating roof is equipped with a vapor-mounted seal as of December 31, 1992, the requirement for one of the seal options specified in paragraphs (b)(3)(i), (b)(3)(ii), and (b)(3)(iii) of this section does not apply until the earlier of the dates specified in paragraphs (b)(3)(iv)(A) and (b)(3)(iv)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(4) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(5) Except as provided in paragraph (b)(5)(viii) of this section, each internal floating roof shall meet the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section.

(i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the liquid surface.

(ii) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid. The cover or lid shall be equipped with a gasket.

(iii) Each penetration of the internal floating roof for the purposes of sampling shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(iv) Each automatic bleeder vent shall be gasketed.

(v) Each rim space vent shall be gasketed.

(vi) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(vii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(viii) If the internal floating roof does not meet any one of the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section as of December 31, 1992, the requirement for meeting those specifications does not apply until the earlier of the dates specified in paragraphs (b)(5)(viii)(A) and (b)(5)(viii)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(6) Each cover or lid on any opening in the internal floating roof shall be closed (i.e., no visible gaps), except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed. Rim space vents are to be set to open only when the internal floating roof is not floating or

when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(c) The owner or operator who elects to use an external floating roof, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (c)(1) through (c)(4) of this section.

(1) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge.

(i) Except as provided in paragraph (c)(1)(iv) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.

(ii) Except as provided in paragraph (c)(1)(v) of this section, the primary seal shall be either a metallic shoe seal or a liquid-mounted seal.

(iii) Except during the inspections required by § 63.120(b) of this subpart, both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion.

(iv) If the external floating roof is equipped with a liquid-mounted or metallic shoe primary seal as of December 31, 1992, the requirement for a secondary seal in paragraph (c)(1)(i) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(iv)(A) and (c)(1)(iv)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(v) If the external floating roof is equipped with a vapor-mounted primary seal and a secondary seal as of December 31, 1992, the requirement for a liquid-mounted or metallic shoe primary seal in paragraph (c)(1)(ii) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(v)(A) and (c)(1)(v)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

(2) Each external floating roof shall meet the specifications listed in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.

(i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in the non-contact external floating roof shall provide a projection below the liquid surface except as provided in paragraph (c)(2)(xii) of this section.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal or lid which is to be maintained in a closed position (i.e., no visible gap) at all times except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed.

(iii) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.

(iv) Rim space vents are to be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(v) Automatic bleeder vents and rim space vents are to be gasketed.

(vi) Each roof drain that empties into the stored liquid is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(vii) Each unslotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

(viii) Each unslotted guide pole shall have on the end of the pole a gasketed cap which is closed at all times except when gauging the liquid level or taking liquid samples.

(ix) Each slotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

(x) Each slotted guide pole shall have a gasketed float or other device which closes off the liquid surface from the atmosphere.

(xi) Each gauge hatch/sample well shall have a gasketed cover which is

closed at all times except when the hatch or well must be open for access.

(xii) If each opening in a noncontact external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents does not provide a projection below the liquid surface as of December 31, 1992, the requirement for providing these projections below the liquid surface does not apply until the earlier of the dates specified in paragraphs (c)(2)(xii)(A) and (c)(2)(xii)(B) of this section.

(A) The next time the storage vessel is emptied and degassed.

(B) No later than 10 years after April 22, 1994.

NOTE: The intent of paragraphs (c)(3) and (c)(4) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

(3) The external floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (c)(3)(i) through (c)(3)(iii) of this section.

(i) During the initial fill.

(ii) After the vessel has been completely emptied and degassed.

(iii) When the vessel is completely emptied before being subsequently refilled.

(4) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(d) The owner or operator who elects to use an external floating roof converted to an internal floating roof (i.e., fixed roof installed above external floating roof) to comply with paragraph (a)(1) of this section shall comply with paragraphs (d)(1) and (d)(2) of this section.

(1) Comply with the requirements for internal floating roof vessels specified in paragraphs (b)(1), (2), and (3) of this section; and

(2) Comply with the requirements for deck fittings that are specified for ex-

ternal floating roof vessels in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.

(e) The owner or operator who elects to use a closed vent system and control device, as defined in §63.111 of this subpart, to comply with the requirements of paragraph (a)(1) or (a)(2) of this section shall comply with the requirements specified in paragraphs (e)(1) through (e)(5) of this section.

(1) Except as provided in paragraph (e)(2) of this section, the control device shall be designed and operated to reduce inlet emissions of total organic HAP by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements of §63.11(b) of subpart A of this part.

(2) If the owner or operator can demonstrate that a control device installed on a storage vessel on or before December 31, 1992 is designed to reduce inlet emissions of total organic HAP by greater than or equal to 90 percent but less than 95 percent, then the control device is required to be operated to reduce inlet emissions of total organic HAP by 90 percent or greater.

(3) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraph (e)(1) or (e)(2) of this section, as applicable, shall not exceed 240 hours per year.

(4) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during periods of planned routine maintenance.

(5) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during a control system malfunction.

(6) An owner or operator may use a combination of control devices to achieve the required reduction of total organic hazardous air pollutants specified in paragraph (e)(1) of this section. An owner or operator may use a combination of control devices installed on a storage vessel on or before December 31, 1992 to achieve the required reduction of total organic hazardous air pollutants specified in paragraph (e)(2) of this section.

(f) The owner or operator who elects to route emissions to a fuel gas system or to a process, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) or (a)(2) of this section shall comply with the requirements in paragraphs (f)(1) through (f)(3) of this section, as applicable.

(1) If emissions are routed to a fuel gas system, there is no requirement to conduct a performance test or design evaluation. If emissions are routed to a process, the organic hazardous air pollutants in the emissions shall predominantly meet one of, or a combination of, the ends specified in paragraphs (f)(1)(i) through (f)(1)(iv) of this section. The owner or operator shall comply with the compliance demonstration requirements in § 63.120(f).

(i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;

(ii) Transformed by chemical reaction into materials that are not organic hazardous air pollutants;

(iii) Incorporated into a product; and/or

(iv) Recovered.

(2) If the emissions are conveyed by a system other than hard-piping, any conveyance system operated under positive pressure shall be subject to the requirements of § 63.148 of this subpart.

(3) The fuel gas system or process shall be operating at all times when organic hazardous air pollutants emissions are routed to it except as provided in § 63.102(a)(1) of subpart F of this part and in paragraphs (f)(3)(i) through (f)(3)(iii) of this section. Whenever the owner or operator by-passes the fuel gas system or process, the owner or operator shall comply with the recordkeeping requirement in § 63.123(h) of this subpart. Bypassing is permitted if the owner or operator complies with one or more of the conditions specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) The liquid level in the storage vessel is not increased;

(ii) The emissions are routed through a closed-vent system to a control device complying with § 63.119(e) of this subpart; or

(iii) The total aggregate amount of time during which the emissions by-

pass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except start-ups/shutdowns/malfunctions or product changeovers of flexible operation units and periods when the storage vessel has been emptied and degassed), does not exceed 240 hours.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2747, Jan. 17, 1997]

§ 63.120 Storage vessel provisions—procedures to determine compliance.

(a) To demonstrate compliance with § 63.119(b) of this subpart (storage vessel equipped with a fixed roof and internal floating roof) or with § 63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(7) of this section.

(1) The owner or operator shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), according to the schedule specified in paragraphs (a)(2) and (a)(3) of this section.

(2) For vessels equipped with a single-seal system, the owner or operator shall perform the inspections specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) Visually inspect the internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in § 63.100 of subpart F of this part.

(ii) Visually inspect the internal floating roof, the seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed, and at least once every 10 years after the compliance date specified in § 63.100 of subpart F of this part.

(3) For vessels equipped with a double-seal system as specified in § 63.119(b)(3)(iii) of this subpart, the owner or operator shall perform either the inspection required in paragraph (a)(3)(i) of this section or the inspections required in both paragraphs (a)(3)(ii) and (a)(3)(iii) of this section.

(i) The owner or operator shall visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed and at least once every 5 years after the compliance date specified in § 63.100 of subpart F of this part; or

(ii) The owner or operator shall visually inspect the internal floating roof and the secondary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in § 63.100 of subpart F of this part, and

(iii) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the vessel is emptied and degassed and at least once every 10 years after the compliance date specified in § 63.100 of subpart F of this part.

(4) If during the inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section, the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached; or there are holes or tears in the seal fabric; or there are visible gaps between the seal and the wall of the storage vessel, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

(5) Except as provided in paragraph (a)(6) of this section, for all the inspections required by paragraphs (a)(2)(ii),

(a)(3)(i), and (a)(3)(iii) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to the refilling of each storage vessel to afford the Administrator the opportunity to have an observer present.

(6) If the inspection required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel, the owner or operator shall notify the Administrator at least 7 calendar days prior to the refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to refilling.

(7) If during the inspections required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section, the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with organic HAP.

(b) To demonstrate compliance with § 63.119(c) of this subpart (storage vessel equipped with an external floating roof), the owner or operator shall comply with the requirements specified in paragraphs (b)(1) through (b)(10) of this section.

(1) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel, and the secondary seal and the wall of the storage vessel according to the frequency specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the primary seal shall be performed during the hydrostatic testing of the vessel or by the compliance date specified in § 63.100 of subpart F of this part, whichever occurs last, and at least once every 5 years thereafter.

(ii) For an external floating roof vessel equipped with a liquid-mounted or metallic shoe primary seal and without a secondary seal as provided for in § 63.119(c)(1)(iv) of this subpart, measurements of gaps between the vessel wall and the primary seal shall be performed by the compliance date specified in § 63.100 of subpart F of this part and at least once per year thereafter, until a secondary seal is installed. When a secondary seal is installed above the primary seal, measurements of gaps between the vessel wall and both the primary and secondary seals shall be performed within 90 calendar days of installation of the secondary seal, and according to the frequency specified in paragraphs (b)(1)(i) and (b)(1)(iii) of this section thereafter.

(iii) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the secondary seal shall be performed by the compliance date specified in § 63.100 of subpart F of this part and at least once per year thereafter.

(iv) If any storage vessel ceases to store organic HAP for a period of 1 year or more, or if the maximum true vapor pressure of the total organic HAP's in the stored liquid falls below the values defining Group 1 storage vessels specified in table 5 or table 6 of this subpart for a period of 1 year or more, measurements of gaps between the vessel wall and the primary seal, and gaps between the vessel wall and the secondary seal shall be performed within 90 calendar days of the vessel being refilled with organic HAP.

(2) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine gap widths and gap areas in the primary and secondary seals (seal gaps) individually by the procedures described in paragraphs

(b)(2)(i) through (b)(2)(iii) of this section.

(i) Seal gaps, if any, shall be measured at one or more floating roof levels when the roof is not resting on the roof leg supports.

(ii) Seal gaps, if any, shall be measured around the entire circumference of the vessel in each place where an 0.32 centimeter ($\frac{1}{8}$ inch) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel. The circumferential distance of each such location shall also be measured.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.

(3) The owner or operator shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters.

(4) The owner or operator shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of primary seal gaps as required by paragraph (b)(1)(i) and (b)(1)(ii) of this section.

(5) The primary seal shall meet the additional requirements specified in paragraphs (b)(5)(i) and (b)(5)(ii) of this section.

(i) Where a metallic shoe seal is in use, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface.

(ii) There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(6) The secondary seal shall meet the additional requirements specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.

(i) The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in paragraph (b)(4) of this section.

(ii) There shall be no holes, tears, or other openings in the seal or seal fabric.

(7) If the owner or operator determines that it is unsafe to perform the seal gap measurements required in paragraphs (b)(1) and (b)(2) of this section or to inspect the vessel to determine compliance with paragraphs (b)(5) and (b)(6) of this section because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (b)(7)(i) or (b)(7)(ii) of this section.

(i) The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or

(ii) The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe. If the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the vessel will be emptied as soon as practical.

(8) The owner or operator shall repair conditions that do not meet requirements listed in paragraphs (b)(3), (b)(4), (b)(5), and (b)(6) of this section (i.e., failures) no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service

no later than 45 calendar days after identification. If during seal gap measurements required in paragraph (b)(1) and (b)(2) of this section or during inspections necessary to determine compliance with paragraphs (b)(5) and (b)(6) of this section a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

(9) The owner or operator shall notify the Administrator in writing 30 calendar days in advance of any gap measurements required by paragraph (b)(1) or (b)(2) of this section to afford the Administrator the opportunity to have an observer present.

(10) The owner or operator shall visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.

(ii) Except as provided in paragraph (b)(10)(iii) of this section, for all the inspections required by paragraph (b)(10) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.

(iii) If the inspection required by paragraph (b)(10) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.

(c) To demonstrate compliance with §63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements of paragraph (a) of this section.

(d) To demonstrate compliance with §63.119(e) of this subpart (storage vessel equipped with a closed vent system and control device) using a control device other than a flare, the owner or operator shall comply with the requirements in paragraphs (d)(1) through (d)(7) of this section, except as provided in paragraph (d)(8) of this section.

(1) The owner or operator shall either prepare a design evaluation, which includes the information specified in paragraph (d)(1)(i) of this section, or submit the results of a performance test as described in paragraph (d)(1)(ii) of this section.

(i) The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content under varying liquid level conditions, and the information specified in paragraphs (d)(1)(i)(A) through (d)(1)(i)(E) of this section, as applicable.

(A) If the control device receives vapors, gases or liquids, other than fuels, from emission points other than storage vessels subject to this subpart, the efficiency demonstration is to include

consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

(B) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet the emission reduction requirement specified in §63.119 (e)(1) or (e)(2), as applicable, documentation that those conditions exist is sufficient to meet the requirements of paragraph (d)(1)(i) of this section.

(C) Except as provided in paragraph (d)(1)(i)(B) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.

(D) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.

(E) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(ii) If the control device used to comply with §63.119(e) of this subpart is also used to comply with §63.113(a)(2), §63.126(b)(1), or §63.139(c) of this subpart, the performance test required by §63.116(c), §63.128(a), or §63.139(d)(1) of this subpart is acceptable to demonstrate compliance with §63.119(e) of this subpart. The owner or operator is not required to prepare a design evaluation for the control device as described in paragraph (d)(1)(i) of this section, if the performance tests meets the criteria specified in paragraphs (d)(1)(ii)(A) and (d)(1)(ii)(B) of this section.

(A) The performance test demonstrates that the control device achieves greater than or equal to the

required control efficiency specified in § 63.119 (e)(1) or (e)(2) of this subpart, as applicable; and

(B) The performance test is submitted as part of the Notification of Compliance Status required by § 63.151(b) of this subpart.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.151 (b) of this subpart, a monitoring plan containing the information specified in paragraph (d)(2)(i) of this section and in either (d)(2)(ii) or (d)(2)(iii) of this section.

(i) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed (e.g., when the liquid level in the storage vessel is being raised); and either

(ii) The documentation specified in paragraph (d)(1)(i) of this section, if the owner or operator elects to prepare a design evaluation; or

(iii) The information specified in paragraph (d)(2)(iii) (A) and (B) of this section if the owner or operator elects to submit the results of a performance test.

(A) Identification of the storage vessel and control device for which the performance test will be submitted, and

(B) Identification of the emission point(s) that share the control device with the storage vessel and for which the performance test will be conducted.

(3) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraphs (d)(3)(i) and, if applicable, (d)(3)(ii) of this section.

(i) The operating range for each monitoring parameter identified in the monitoring plan. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

(ii) Results of the performance test described in paragraph (d)(1)(ii) of this section.

(4) The owner or operator shall demonstrate compliance with the requirements of § 63.119(e)(3) of this subpart (planned routine maintenance of a control device, during which the control device does not meet the specifications of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, shall not exceed 240 hours per year) by including in each Periodic Report required by § 63.152(c) of this subpart the information specified in § 63.122(g)(1) of this subpart.

(5) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in § 63.152(b) of this subpart or in the operating permit and shall operate and maintain the control device such that the monitored parameters remain within the ranges specified in the Notification of Compliance Status.

(6) Except as provided in paragraph (d)(7) of this section, each closed vent system shall be inspected as specified in § 63.148 of this subpart. The initial and annual inspections required by § 63.148(b) of this subpart shall be done during filling of the storage vessel.

(7) For any fixed roof tank and closed vent system that are operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(8) A design evaluation or performance test is not required, if the owner or operator uses a combustion device meeting the criteria in paragraph (d)(8)(i), (d)(8)(ii), (d)(8)(iii), or (d)(8)(iv) of this section.

(i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(ii) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(iii) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O or

has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(iv) A boiler or process heater into which the vent stream is introduced with the primary fuel.

(e) To demonstrate compliance with § 63.119(e) of this subpart (storage vessel equipped with a closed vent system and control device) using a flare, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(6) of this section.

(1) The owner or operator shall perform the compliance determination specified in § 63.11(b) of subpart A of this part.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by paragraph (e)(1) of this section; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(3) The owner or operator shall demonstrate compliance with the requirements of § 63.119(e)(3) of this subpart (planned routine maintenance of a flare, during which the flare does not meet the specifications of § 63.119(e)(1) of this subpart, shall not exceed 240 hours per year) by including in each Periodic Report required by § 63.152(c) of this subpart the information specified in § 63.122(g)(1) of this subpart.

(4) The owner or operator shall continue to meet the general control device requirements specified in § 63.11(b) of subpart A of this part.

(5) Except as provided in paragraph (e)(6) of this section, each closed vent system shall be inspected as specified in § 63.148 of this subpart. The inspections required to be performed in accordance with § 63.148(c) of this subpart shall be done during filling of the storage vessel.

(6) For any fixed roof tank and closed vent system that is operated and main-

tained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(f) To demonstrate compliance with § 63.119(f) of this subpart (storage vessel routed to a process), the owner or operator shall prepare a design evaluation (or engineering assessment) that demonstrates the extent to which one or more of the ends specified in § 63.119(f)(1)(i) through (f)(1)(iv) are being met. The owner or operator shall submit the design evaluation as part of the Notification of Compliance Status required by § 63.152(b) of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2748, Jan. 17, 1997]

§ 63.121 Storage vessel provisions—alternative means of emission limitation.

(a) Determination of equivalence to the reduction in emissions achieved by the requirements of § 63.119 (b), (c), or (d) of this subpart will be evaluated according to § 63.102(b) of subpart F of this part.

(b) The determination of equivalence referred to in paragraph (a) of this section will be based on the application to the Administrator which shall include the information specified in either paragraph (b)(1) or (b)(2) of this section.

(1) Actual emissions tests that use full-size or scale-model storage vessels that accurately collect and measure all organic HAP emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(2) An engineering analysis that the Administrator determines is an accurate method of determining equivalence.

§ 63.122 Storage vessel provisions—reporting.

(a) For each Group 1 storage vessel, the owner or operator shall comply with the requirements of paragraphs (a)(1) through (a)(5) of this section.

(1) The owner or operator shall submit an Initial Notification as required by § 63.151(b) of this subpart.

(2) [Reserved]

(3) The owner or operator shall submit a Notification of Compliance Status as required by § 63.152(b) of this subpart and shall submit as part of the Notification of Compliance Status the information specified in paragraph (c) of this section.

(4) The owner or operator shall submit Periodic Reports as required by § 63.152(c) of this subpart and shall submit as part of the Periodic Reports the information specified in paragraphs (d), (e), (f), and (g) of this section.

(5) The owner or operator shall submit, as applicable, other reports as required by § 63.152(d) of this subpart, containing the information specified in paragraph (h) of this section.

(b) An owner or operator who elects to comply with § 63.119(e) of this subpart by using a closed vent system and a control device other than a flare shall submit, as part of the Monitoring Plan, the information specified in § 63.120(d)(2)(i) of this subpart and the information specified in either § 63.120(d)(2)(ii) of this subpart or § 63.120(d)(2)(iii) of this subpart.

(c) An owner or operator who elects to comply with § 63.119(e) of this subpart by using a closed vent system and a control device shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in either paragraph (c)(1) or (c)(2) of this section. An owner or operator who elects to comply with § 63.119(f) of this subpart by routing emissions to a process or to a fuel gas system shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraph (c)(3) of this section.

(1) If a control device other than a flare is used, the owner or operator shall submit the information specified in § 63.120(d)(3)(i) and, if applicable, (d)(3)(ii) of this subpart.

(2) If a flare is used, the owner or operator shall submit the information specified in § 63.120(e)(2)(i), (e)(2)(ii), and (e)(2)(iii) of this subpart.

(3) If emissions are routed to a process, the owner or operator shall submit the information specified in § 63.120(f). If emissions are routed to a fuel gas system, the owner or operator shall submit a statement that the emission

stream is connected to the fuel gas system and whether the conveyance system is subject to the requirements of § 63.148.

(d) An owner or operator who elects to comply with § 63.119(b) of this subpart by using a fixed roof and an internal floating roof or with § 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, the results of each inspection conducted in accordance with § 63.120(a) of this subpart in which a failure is detected in the control equipment.

(1) For vessels for which annual inspections are required under § 63.120 (a)(2)(i) or (a)(3)(ii) of this subpart, the specifications and requirements listed in paragraphs (d)(1)(i) through (d)(1)(iii) of this section apply.

(i) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

(ii) Except as provided in paragraph (d)(1)(iii) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.

(iii) If an extension is utilized in accordance with § 63.120(a)(4) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(a)(4) of this subpart; and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(2) For vessels for which inspections are required under § 63.120 (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this subpart, the specifications and requirements listed in paragraphs (d)(2)(i) and (d)(2)(ii) of this section apply.

(i) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) Each Periodic Report required under § 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(e) An owner or operator who elects to comply with § 63.119(c) of this subpart by using an external floating roof shall meet the periodic reporting requirements specified in paragraphs (e)(1), (e)(2), and (e)(3) of this section.

(1) The owner or operator shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, documentation of the results of each seal gap measurement made in accordance with § 63.120(b) of this subpart in which the requirements of § 63.120(b)(3), (b)(4), (b)(5), or (b)(6) of this subpart are not met. This documentation shall include the information specified in paragraphs (e)(1)(i) through (e)(1)(iv) of this section.

(i) The date of the seal gap measurement.

(ii) The raw data obtained in the seal gap measurement and the calculations described in § 63.120(b)(3) and (b)(4) of this subpart.

(iii) A description of any condition specified in § 63.120(b)(5) or (b)(6) of this subpart that is not met.

(iv) A description of the nature of and date the repair was made, or the date the storage vessel was emptied.

(2) If an extension is utilized in accordance with § 63.120(b)(7)(ii) or (b)(8) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(b)(7)(ii) or (b)(8) of this subpart, as applicable; and describe the date the vessel was emptied and the nature of and date the repair was made.

(3) The owner or operator shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, documentation of any failures that are identified during visual inspections required by § 63.120(b)(10) of this subpart. This documentation shall meet the specifications and requirements in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.

(i) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) Each Periodic Report required under § 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The periodic report shall also describe the nature of and date the repair was made.

(f) An owner or operator who elects to comply with § 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (d) of this section.

(g) An owner or operator who elects to comply with § 63.119(e) of this subpart by installing a closed vent system and control device shall submit, as part of the next Periodic Report required by § 63.152(c) of this subpart, the information specified in paragraphs (g)(1) through (g)(3) of this section.

(1) As required by § 63.120(d)(4) and § 63.120(e)(3) of this subpart, the Periodic Report shall include the information specified in paragraphs (g)(1)(i) and (g)(1)(ii) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.119(e)(1) or (e)(2) of this subpart, as applicable.

(i) A description of the planned routine maintenance that is anticipated to be performed for the control device

during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(ii) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to planned routine maintenance.

(2) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status in accordance with § 63.120(d)(3)(i) of this subpart. The description shall include the information specified in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(i) Identification of the control device for which the measured parameters were outside of the established ranges, and

(ii) Cause for the measured parameters to be outside of the established ranges.

(3) If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in § 63.11(b) of subpart A of this part and shall include the information specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this section.

(i) Identification of the flare which does not meet the general requirements specified in § 63.11(b) of subpart A of this part, and

(ii) Reason the flare did not meet the general requirements specified in § 63.11(b) of subpart A of this part.

(h) An owner or operator who elects to comply with § 63.119 (b), (c), or (d) of this subpart shall submit, as applicable, the reports specified in paragraphs (h)(1) and (h)(2) of this section.

(i) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the

refilling of a storage vessel that has been emptied and degassed.

(i) If the storage vessel is equipped with an internal floating roof as specified in § 63.119(b) of this subpart, the notification shall meet the requirements of either § 63.120 (a)(5) or (a)(6) of this subpart, as applicable.

(ii) If the storage vessel is equipped with an external floating roof as specified in § 63.119(c) of this subpart, the notification shall meet the requirements of either § 63.120 (b)(10)(ii) or (b)(10)(iii) of this subpart, as applicable.

(iii) If the storage vessel is equipped with an external floating roof converted into an internal floating roof as specified in § 63.119(d) of this subpart, the notification shall meet the requirements of either § 63.120 (a)(5) or (a)(6) of this subpart, as applicable.

(2) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof as specified in § 63.119(c) of this subpart shall notify the Administrator of any seal gap measurements. This notification shall meet the requirements of § 63.120(b)(9) of this subpart.

[59 FR 19468, Apr. 22, 1996, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2748, Jan. 17, 1997]

§ 63.123 Storage vessel provisions—recordkeeping.

(a) Each owner or operator of a Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. For each Group 2 storage vessel, the owner or operator is not required to comply with any other provisions of §§ 63.119 through 63.123 of this subpart other than those required by this paragraph unless such vessel is part of an emissions average as described in § 63.150 of this subpart.

(b) [Reserved]

(c) An owner or operator who elects to comply with § 63.119(b) of this subpart shall keep a record that each inspection required by § 63.120(a) of this subpart was performed.

(d) An owner or operator who elects to comply with § 63.119(c) of this subpart shall keep records describing the results of each seal gap measurement made in accordance with § 63.120(b) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 63.120(b) (3) and (4) of this subpart.

(e) An owner or operator who elects to comply with § 63.119(d) of this subpart shall keep a record that each inspection required by § 63.120 (a) and (c) of this subpart was performed.

(f) An owner or operator who elects to comply with § 63.119(e) of this subpart shall keep in a readily accessible location the records specified in paragraphs (f)(1) and (f)(2) of this section.

(1) A record of the measured values of the parameters monitored in accordance with § 63.120(d)(5) of this subpart.

(2) A record of the planned routine maintenance performed on the control device including the duration of each time the control device does not meet the specifications of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to the planned routine maintenance. Such a record shall include the information specified in paragraphs (f)(2)(i) and (f)(2)(ii) of this section.

(i) The first time of day and date the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, were not met at the beginning of the planned routine maintenance, and

(ii) The first time of day and date the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, were met at the conclusion of the planned routine maintenance.

(g) An owner or operator who elects to utilize an extension in emptying a storage vessel in accordance with § 63.120 (a)(4), (b)(7)(ii), or (b)(8) of this subpart shall keep in a readily accessible location, the documentation specified in § 63.120 (a)(4), (b)(7)(ii), or (b)(8), as applicable.

(h) An owner or operator who uses the by-pass provisions of § 63.119(f)(3) of this subpart shall keep in a readily accessible location the records specified in paragraphs (h)(1) through (h)(3) of this section.

(1) The reason it was necessary to bypass the process equipment or fuel gas system;

(2) The duration of the period when the process equipment or fuel gas system was by-passed;

(3) Documentation or certification of compliance with the applicable provisions of § 63.119(f)(3)(i) through § 63.119(f)(3)(iii).

[59 FR 19468, Apr. 22, 1996, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2748, Jan. 17, 1997]

§ 63.124–63.125 [Reserved]

§ 63.126 Transfer operations provisions—reference control technology.

(a) For each Group 1 transfer rack the owner or operator shall equip each transfer rack with a vapor collection system and control device.

(1) Each vapor collection system shall be designed and operated to collect the organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading, and to route the collected hazardous air pollutants vapors to a process, or to a fuel gas system, or to a control device as provided in paragraph (b) of this section.

(2) Each vapor collection system shall be designed and operated such that organic HAP vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.

(3) Whenever organic hazardous air pollutants emissions are vented to a process, fuel gas system, or control device used to comply with the provisions of this subpart, the process, fuel gas system, or control device shall be operating.

(b) For each Group 1 transfer rack the owner or operator shall comply with paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section.

(1) Use a control device to reduce emissions of total organic hazardous air pollutants by 98 weight-percent or to an exit concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen. If a boiler or process heater is used to comply

with the percent reduction requirement, then the vent stream shall be introduced into the flame zone of such a device. Compliance may be achieved by using any combination of combustion, recovery, and/or recapture devices.

(2) Reduce emissions of organic HAP's using a flare.

(i) The flare shall comply with the requirements of § 63.11(b) of subpart A of this part.

(ii) Halogenated vent streams, as defined in § 63.111 of this subpart, shall not be vented to a flare.

(3) Reduce emissions of organic hazardous air pollutants using a vapor balancing system designed and operated to collect organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading; and to route the collected hazardous air pollutants vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected to a common header, or to compress and route to a process collected hazardous air pollutants vapors.

(4) Route emissions of organic hazardous air pollutants to a fuel gas system or to a process where the organic hazardous air pollutants in the emissions shall predominantly meet one of, or a combination of, the ends specified in paragraphs (b)(4)(i) through (b)(4)(iv) of this section.

(i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;

(ii) Transformed by chemical reaction into materials that are not organic hazardous air pollutants;

(iii) Incorporated into a product; and/or

(iv) Recovered.

(c) For each Group 2 transfer rack, the owner or operator shall maintain records as required in § 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack.

(d) Halogenated emission streams from Group 1 transfer racks that are combusted shall be controlled according to paragraph (d)(1) or (d)(2) of this section. Determination of whether a vent stream is halogenated shall be made using procedures in (d)(3).

(1) If a combustion device is used to comply with paragraph (b)(1) of this section for a halogenated vent stream,

then the vent stream exiting the combustion device shall be ducted to a halogen reduction device, including, but not limited to, a scrubber before it is discharged to the atmosphere.

(i) Except as provided in paragraph (d)(1)(ii) of this section, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111 of this subpart, by 99 percent or shall reduce the outlet mass emission rate of total hydrogen halides and halogens to 0.45 kilograms per hour or less, whichever is less stringent.

(ii) If a scrubber or other halogen reduction device was installed prior to December 31, 1992, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111 of this subpart, by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour, whichever is less stringent.

(2) A halogen reduction device, such as a scrubber, or other technique may be used to make the vent stream non-halogenated by reducing the vent stream halogen atom mass emission rate to less than 0.45 kilograms per hour prior to any combustion control device used to comply with the requirements of paragraphs (b)(1) or (b)(2) of this section.

(3) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.

(i) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume by compound) shall be determined based on the following procedures:

(A) Process knowledge that no halogen or hydrogen halides are present in the process, or

(B) Applicable engineering assessment as specified in § 63.115(d)(1)(iii) of this subpart, or

(C) Concentration of organic compounds containing halogens measured by Method 18 of 40 CFR part 60, appendix A, or

(D) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(ii) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 V_s \left(\sum_{j=1}^n \sum_{i=1}^m C_j * L_{ji} * M_{ji} \right)$$

where:

E=Mass of halogen atoms, dry basis, kilograms per hour.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20 °C.

C_j =Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

M_{ji} =Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

L_{ji} =Number of atoms of halogen i in compound j of the gas stream.

V_s =Flow rate of gas stream, dry standard cubic meters per minute, determined according to §63.128(a)(8) of this subpart.

j=Halogenated compound j in the gas stream.

i=Halogen atom i in compound j of the gas stream.

n=Number of halogenated compounds j in the gas stream.

m=Number of different halogens i in each compound j of the gas stream.

(e) For each Group 1 transfer rack the owner or operator shall load organic HAP's into only tank trucks and railcars which:

(1) Have a current certification in accordance with the U. S. Department of Transportation pressure test requirements of 49 CFR part 180 for tank trucks and 49 CFR 173.31 for railcars; or

(2) Have been demonstrated to be vapor-tight within the preceding 12 months, as determined by the procedures in §63.128(f) of this subpart. Vapor-tight means that the truck or railcar tank will sustain a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals.

(f) The owner or operator of a transfer rack subject to the provisions of this subpart shall load organic HAP's to only tank trucks or railcars equipped with vapor collection equipment that is compatible with the transfer rack's vapor collection system.

(g) The owner or operator of a transfer rack subject to this subpart shall load organic HAP's to only tank trucks or railcars whose collection systems are connected to the transfer rack's vapor collection systems.

(h) The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure-relief device in the transfer rack's vapor collection system or in the organic hazardous air pollutants loading equipment of each tank truck or railcar shall begin to open during loading. Pressure relief devices needed for safety purposes are not subject to this paragraph.

(i) Each valve in the vent system that would divert the vent stream to the atmosphere, either directly or indirectly, shall be secured in a non-diverting position using a carseal or a lock-and-key type configuration, or shall be equipped with a flow indicator. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief devices needed for safety purposes is not subject to this paragraph.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2749, Jan. 17, 1997]

§63.127 Transfer operations provisions—monitoring requirements.

(a) Each owner or operator of a Group 1 transfer rack equipped with a combustion device used to comply with the 98 percent total organic hazardous air pollutants reduction or 20 parts per million by volume outlet concentration requirements in §63.126(b)(1) of this subpart shall install, calibrate, maintain, and operate according to the manufacturers' specifications (or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately) the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, as appropriate.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, infrared sensor, or an ultra-violet beam sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Where a boiler or process heater with a design heat input capacity less than 44 megawatts is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all vent streams are introduced with the primary fuel or are used as the primary fuel is exempt from this requirement.

(4) Where a scrubber is used with an incinerator, boiler, or process heater in the case of halogenated vent streams, the following monitoring equipment is required for the scrubber:

(i) A pH monitoring device equipped with a continuous recorder shall be installed to monitor the pH of the scrubber effluent.

(ii) A flow meter equipped with a continuous recorder shall be located at the scrubber influent for liquid flow. Gas stream flow shall be determined using one of the procedures specified in paragraphs (a)(4)(ii)(A) through (a)(4)(ii)(C) of this section.

(A) The owner or operator may determine gas stream flow using the design blower capacity, with appropriate adjustments for pressure drop.

(B) If the scrubber is subject to regulations in 40 CFR parts 264 through 266 that have required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for this subpart specified in § 63.100(k) of subpart F of this part, the owner or opera-

tor may determine gas stream flow by the method that had been utilized to comply with those regulations. A determination that was conducted prior to the compliance date for this subpart may be utilized to comply with this subpart if it is still representative.

(C) The owner or operator may prepare and implement a gas stream flow determination plan that documents an appropriate method which will be used to determine the gas stream flow. The plan shall require determination of gas stream flow by a method which will at least provide a value for either a representative or the highest gas stream flow anticipated in the scrubber during representative operating conditions other than start-ups, shutdowns, or malfunctions. The plan shall include a description of the methodology to be followed and an explanation of how the selected methodology will reliably determine the gas stream flow, and a description of the records that will be maintained to document the determination of gas stream flow. The owner or operator shall maintain the plan as specified in § 63.103(c).

(b) Each owner or operator of a Group 1 transfer rack that uses a recovery device or recapture device to comply with the 98-percent organic hazardous air pollutants reduction or 20 parts per million by volume hazardous air pollutants concentration requirements in § 63.126(b)(1) of this subpart shall install either an organic monitoring device equipped with a continuous recorder, or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device or recapture device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(1) Where an absorber is used, a scrubbing liquid temperature monitoring device equipped with a continuous recorder shall be used; and a specific gravity monitoring device equipped with a continuous recorder shall be used.

(2) Where a condenser is used, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used.

(3) Where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle shall be used.

(c) An owner or operator of a Group 1 transfer rack may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) or § 63.152(e) of this subpart. Approval shall be requested if the owner or operator:

(1) Seeks to demonstrate compliance with the standards specified in § 63.126(b) of this subpart with a control device other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber; or

(2) Uses one of the control devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this subpart.

(d) The owner or operator of a Group 1 transfer rack using a vent system that contains by-pass lines that could divert a vent stream flow away from the control device used to comply with § 63.126(b) of this subpart shall comply with paragraph (d)(1) or (d)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.130(b) of this subpart. The flow indicator shall be installed at the entrance to any by-pass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the by-pass line valve in the closed position with a car-seal or a lock-and-key type configuration.

(i) A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the by-pass line.

(ii) If a car-seal has been broken or a valve position changed, the owner or operator shall record that the vent stream has been diverted. The car-seal or lock-and-key combination shall be returned to the secured position as soon as practicable but not later than 15 calendar days after the change in position is detected.

(e) The owner or operator shall establish a range that indicates proper operation of the control device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the information required in § 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2749, Jan. 17, 1997]

§ 63.128 Transfer operations provisions—test methods and procedures.

(a) A performance test is required for determining compliance with the reduction of total organic HAP emissions in § 63.126(b) of this subpart for all control devices except as specified in paragraph (c) of this section. Performance test procedures are as follows:

(1) For control devices shared between transfer racks and process vents, the performance test procedures in § 63.116(c) of this subpart shall be followed.

(2) A performance test shall consist of three runs.

(3) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(4) For control devices shared between multiple arms that load simultaneously, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then

the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(5) For control devices that are capable of continuous vapor processing but do not meet the conditions in (a)(7)(i)(B) of this section.

(A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete filling period, during which liquid organic HAP's are loaded, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(6) For intermittent vapor processing systems that do not meet the conditions in paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete control device cycle, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

(7) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of sampling sites.

(i) For an owner or operator complying with the 98-percent total organic HAP reduction requirements in § 63.126(b)(1) of this subpart, sampling sites shall be located as specified in paragraph (a)(7)(i)(A) or (a)(7)(i)(B) of this section.

(A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.

(B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all vent streams and primary and secondary fuels intro-

duced into the boiler or process heater. A sampling site shall also be located at the outlet of the boiler or process heater.

(ii) For an owner or operator complying with the 20 parts per million by volume limit in § 63.126(b)(1) of this subpart, the sampling site shall be located at the outlet of the control device.

(8) The volumetric flow rate, in standard cubic meters per minute at 20 °C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A as appropriate.

(9) For the purpose of determining compliance with the 20 parts per million by volume limit in § 63.126(b)(1), Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure either organic compound concentration or organic HAP concentration, except as provided in paragraph (a)(11) of this section.

(i) If Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate the concentration of organic compounds (C_T):

(A) The principal organic HAP in the vent stream shall be used as the calibration gas.

(B) The span value for Method 25A of 40 CFR part 60, appendix A shall be between 1.5 and 2.5 times the concentration being measured.

(C) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(D) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (a)(9)(v) of this section.

(ii) If Method 18 of 40 CFR part 60, appendix A is used to measure the concentration of organic compounds, the organic compound concentration (C_T) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_T = \sum_{j=1}^n C_j$$

where:

C_T =Total concentration of organic compounds (minus methane and ethane), dry basis, parts per million by volume.

C_j =Concentration of sample components j , dry basis, parts per million by volume.

n =Number of components in the sample.

(iii) If an owner or operator uses Method 18 of 40 CFR part 60, appendix A to compute total organic HAP concentration rather than organic compounds concentration, the equation in paragraph (a)(9)(ii) of this section shall be used except that only organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iv) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration. The sampling site shall be the same as that of the organic hazardous air pollutants or organic compound samples, and the samples shall be taken during the same time that the organic hazardous air pollutants or organic compound samples are taken.

(v) The organic compound concentration corrected to 3 percent oxygen (C_c) shall be calculated using the following equation:

$$C_c = C_T \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

C_c =Concentration of organic compounds corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_T =Total concentration of organic compounds, dry basis, parts per million by volume.

$\%O_{2d}$ =Concentration of oxygen, dry basis, percent by volume.

(10) For the purpose of determining compliance with the 98-percent reduction requirement in § 63.126(b)(1) of this subpart, Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used, except as provided in paragraph (a)(11) of this section.

(i) For the purpose of determining compliance with the reduction efficiency requirement, organic compound concentration may be measured in lieu of organic HAP concentration.

(ii) If Method 25A of 40 CFR part 60, appendix A is used to measure the concentration of organic compounds (C_T), the principal organic HAP in the vent stream shall be used as the calibration gas.

(A) An emission testing interval shall consist of each 15-minute period during the performance test. For each interval, a reading from each measurement shall be recorded.

(B) The average organic compound concentration and the volume measurement shall correspond to the same emissions testing interval.

(C) The mass at the inlet and outlet of the control device during each testing interval shall be calculated as follows:

$$M_j = FK V_s C_T$$

where:

M_j =Mass of organic compounds emitted during testing interval j , kilograms.

V_s =Volume of air-vapor mixture exhausted at standard conditions, 20 °C and 760 millimeters mercury, standard cubic meters.

C_T =Total concentration of organic compounds (as measured) at the exhaust vent, parts per million by volume, dry basis.

K =Density, kilograms per standard cubic meter organic HAP. 659 kilograms per standard cubic meter organic HAP. (Note: The density term cancels out when the percent reduction is calculated. Therefore, the density used has no effect. The density of hexane is given so that it can be used to maintain the units of M_j .)

$F=10^{-6}$ =Conversion factor, (cubic meters organic HAP per cubic meters air) * (parts per million by volume)⁻¹.

(D) The organic compound mass emission rates at the inlet and outlet of the control device shall be calculated as follows:

$$E_i = \frac{\sum_{j=1}^n M_{ij}}{T}$$

$$E_o = \frac{\sum_{j=1}^n M_{oj}}{T}$$

where:

E_i , E_o =Mass flow rate of organic compounds at the inlet (i) and outlet (o) of the combustion or recovery device, kilograms per hour.

M_{ij} , M_{oj} =Mass of organic compounds at the inlet (i) or outlet (o) during testing interval j, kilograms.

T =Total time of all testing intervals, hours.

n =Number of testing intervals.

(iii) If Method 18 of 40 CFR part 60, appendix A is used to measure organic compounds, the mass rates of organic compounds (E_i , E_o) shall be computed using the following equations:

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} MW_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} MW_{oj} \right) Q_o$$

where:

C_{ij} , C_{oj} =Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

MW_{ij} , MW_{oj} =Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o =Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard tem-

perature for (gram-mole per standard cubic meter) is 20 °C.

(iv) Where Method 18 or 25A of 40 CFR part 60, appendix A is used to measure the percent reduction in organic compounds, the percent reduction across the control device shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100)$$

where:

R =Control efficiency of control device, percent.

E_i =Mass emitted or mass flow rate of organic compounds at the inlet to the combustion or recovery device as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

E_o =Mass emitted or mass flow rate of organic compounds at the outlet of the combustion or recovery device, as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

(1) The owner or operator may use any methods or data other than Method 18 or Method 25A of 40 CFR part 60, appendix A, if the method or data has been validated according to Method 301 of appendix A of this part.

(b) When a flare is used to comply with §63.126(b)(2) of this subpart, the owner or operator shall comply with the flare provisions in §63.11(b) of subpart A of this part.

(1) The compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions. The observation period shall be at least 2 hours and shall be conducted according to Method 22 of 40 CFR part 60, appendix A.

(i) If the loading cycle is less than 2 hours, then the observation period for that run shall be for the entire loading cycle.

(ii) If additional loading cycles are initiated within the 2-hour period, then visible emission observations shall be conducted for the additional cycles.

(2) An owner or operator is not required to conduct a performance test to determine the percent emission reduction or outlet total HAP or TOC concentration when a flare is used.

(c) An owner or operator is not required to conduct a performance test when any of the conditions specified in paragraphs (c)(1) through (c)(7) of this section are met.

(1) When a boiler or process heater with a design heat input capacity of 44 megawatts or greater is used.

(2) When a boiler or process heater burning hazardous waste is used for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266 subpart H.

(3) When emissions are routed to a fuel gas system or when a boiler or process heater is used and the vent stream is introduced with the primary fuel.

(4) When a vapor balancing system is used.

(5) When emissions are recycled to a chemical manufacturing process unit.

(6) When a transfer rack transfers less than 11.8 million liters per year and the owner or operator complies with the requirements in paragraph (h) of this section or uses a flare to comply with § 63.126(b)(2) of this subpart.

(7) When a hazardous waste incinerator is used for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements 40 CFR part 265, subpart O.

(d) An owner or operator using a combustion device followed by a scrubber or other halogen reduction device to control a halogenated transfer vent stream in compliance with § 63.126(d) of this subpart shall conduct a performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens.

(1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other halogen reduction device used to reduce halogen emissions. For an owner or operator complying

with the 0.45 kilogram per hour outlet mass emission rate limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other halogen reduction device and prior to release to the atmosphere.

(2) Except as provided in paragraph (d)(5) of this section, Method 26 or 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration in milligrams per dry standard cubic meter of the hydrogen halides and halogens that may be present in the stream. The mass emission rate of each hydrogen halide and halogen compound shall be calculated from the concentrations and the gas stream flow rate.

(3) To determine compliance with the percent emissions reduction limit, the mass emission rate for any hydrogen halides and halogens present at the scrubber inlet shall be summed together. The mass emission rate of the compounds present at the scrubber outlet shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.

(4) To demonstrate compliance with the 0.45 kilograms per hour mass emission rate limit, the test results must show that the mass emission rate of the total hydrogen halides and halogens measured at the scrubber outlet is below 0.45 kilograms per hour.

(5) The owner or operator may use any other method or data to demonstrate compliance if the method or data has been validated according to the protocol of Method 301 of appendix A of this part.

(e) The owner or operator shall inspect the vapor collection system and vapor balancing system, according to the requirements for vapor collection systems in § 63.148 of this subpart.

(1) Inspections shall be performed only while a tank truck or railcar is being loaded.

(2) For vapor collection systems only, an inspection shall be performed prior to each performance test required to demonstrate compliance with § 63.126(b)(1) of this subpart.

(3) For each vapor collection system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the

requirements specified in § 63.148 of this subpart.

(f) For the purposes of demonstrating vapor tightness to determine compliance with § 63.126(e)(2) of this subpart, the following procedures and equipment shall be used:

(1) The pressure test procedures specified in Method 27 of 40 CFR part 60, appendix A; and

(2) A pressure measurement device which has a precision of #1B2.5 millimeters of mercury or better and which is capable of measuring above the pressure at which the tank truck or railcar is to be tested for vapor tightness.

(g) An owner or operator using a scrubber or other halogen reduction device to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilograms per hour prior to a combustion device used to comply with § 63.126(d)(2) shall determine the halogen atom mass emission rate prior to the combustor according to the procedures in paragraph (d)(3) of this section.

(h) For transfer racks that transfer less than 11.8 million liters per year of liquid organic HAP's, the owner or operator may comply with the requirements in paragraphs (h)(1) through (h)(3) of this section instead of the requirements in paragraph (a) or (b) of this section.

(1) The owner or operator shall prepare, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, a design evaluation that shall document that the control device being used achieves the required control efficiency during reasonably expected maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content, and the information specified in paragraphs (h)(1)(i) through (h)(1)(v) of this section, as applicable.

(i) If the control device receives vapors, gases, or liquids, other than fuels, from emission points other than transfer racks subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

(ii) If an enclosed combustion device with a maximum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet the 98-percent emission reduction requirement, documentation that those conditions exist is sufficient to meet the requirements of paragraph (h)(1) of this section.

(iii) Except as provided in paragraph (h)(1)(ii) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.

(iv) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.

(v) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the operating range for each monitoring parameter identified for each control device. The specified operating range shall represent the conditions for which the control device can achieve the 98-percent-or-greater emission reduction required by § 63.126(b)(1) of this subpart.

(3) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in § 63.152(b) of this subpart or operating permit and shall operate and maintain the control device such that the monitored parameters remain within the ranges specified in the Notification of Compliance Status, except

as provided in §§ 63.152(c) and 63.152(f) of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2750, Jan. 17, 1997]

§ 63.129 Transfer operations provisions—reporting and recordkeeping for performance tests and notification of compliance status.

(a) Each owner or operator of a Group 1 transfer rack shall:

(1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(8) of this section, as applicable.

(2) Include the data specified in paragraphs (a)(4) through (a)(7) of this section in the Notification of Compliance Status report as specified in § 63.152(b) of this subpart.

(3) If any subsequent performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(7) of this section in the next Periodic Report as specified in § 63.152(c) of this subpart.

(4) Record and report the following when using a control device other than a flare to achieve a 98 weight percent reduction in total organic HAP or a total organic HAP concentration of 20 parts per million by volume, as specified in § 63.126(b)(1) of this subpart:

(i) The parameter monitoring results for thermal incinerators, catalytic incinerators, boilers or process heaters, absorbers, condensers, or carbon adsorbers specified in table 7 of this subpart, recorded during the performance test, and averaged over the time period of the performance testing.

(ii) For combustion devices, the concentration shall be reported on a dry basis corrected to 3-percent oxygen.

(iii) The parameters shall be recorded at least every 15 minutes.

(iv) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(5) Record and report the following when using a flare to comply with § 63.126(b)(2) of this subpart:

(i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate

measurements, and exit velocity determinations made during the compliance determination required by § 63.128(b) of this subpart; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(6) Record and report the following when using a scrubber following a combustion device to control a halogenated vent stream, as specified in § 63.126(d) of this subpart:

(i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens determined according to the procedures in § 63.128(d) of this subpart;

(ii) The parameter monitoring results for scrubbers specified in table 7 of this subpart, and averaged over the time period of the performance test; and

(iii) The parameters shall be recorded at least every 15 minutes.

(7) Record and report the halogen concentration in the vent stream determined according to the procedures as specified in § 63.128(d) of this subpart.

(8) Report that the emission stream is being routed to a fuel gas system or a process, when complying using § 63.126(b)(4).

(b) If an owner or operator requests approval to use a control device other than those listed in table 7 of this subpart or to monitor a parameter other than those specified in table 7 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under § 63.151(f) or § 63.152(e) of this subpart. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(c) For each parameter monitored according to table 7 of this subpart or paragraph (b) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control device. In order to establish the range, the information required in § 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

(d) Each owner or operator shall maintain a record describing in detail

the vent system used to vent each affected transfer vent stream to a control device. This document shall list all valves and vent pipes that could vent the stream to the atmosphere, thereby by-passing the control device; identify which valves are secured by car-seals or lock-and-key type configurations; and indicate the position (open or closed) of those valves which have car-seals. Equipment leaks such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(e) An owner or operator meeting the requirements of § 63.128(h) of this subpart shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in § 63.128(h)(1) of this subpart.

(f) An owner or operator meeting the requirements of § 63.128(h) of this subpart shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the operating range for each monitoring parameter identified for each control device.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2750, Jan. 17, 1997]

§ 63.130 Transfer operations provisions—periodic recordkeeping and reporting.

(a) Each owner or operator using a control device to comply with § 63.126(b)(1) or (b)(2) of this subpart shall keep the following up-to-date, readily accessible records:

(1) While the transfer vent stream is being vented to the control device, continuous records of the equipment operating parameters specified to be monitored under § 63.127 of this subpart, and listed in table 7 of this subpart or specified by the Administrator in accordance with §§ 63.127(c) and 63.129(b). For flares, the hourly records and records of pilot flame outages specified in table 7 shall be maintained in place of continuous records.

(2) Records of the daily average value of each monitored parameter for each operating day determined according to the procedures specified in § 63.152(f),

except as provided in paragraphs (a)(2)(i) through (a)(2)(iii) of this section.

(i) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.

(ii) If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 7 of this subpart shall be kept instead of the daily averages.

(iii) Records of the duration of all periods when the vent stream is diverted through by-pass lines shall be kept rather than daily averages.

(3) For boilers or process heaters, records of any changes in the location at which the vent stream is introduced into the flame zone as required under the reduction of total organic HAP emissions in § 63.126(b)(1) of this subpart.

(b) If a vapor collection system containing valves that could divert the emission stream away from the control device is used, each owner or operator of a Group 1 transfer rack subject to the provisions of § 63.127(d) of this subpart shall keep up-to-date, readily accessible records of:

(1) Hourly records of whether the flow indicator specified under § 63.127(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(2) Where a seal mechanism is used to comply with § 63.127(d)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the by-pass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken, as listed in table 7 of this subpart.

(c) Each owner or operator of a Group 1 transfer rack who uses a flare to comply with § 63.126(b)(2) of this subpart

shall keep up-to-date, readily accessible records of the flare pilot flame monitoring specified under § 63.127(a)(2) of this subpart.

(d) Each owner or operator of a transfer rack subject to the requirements of § 63.126 of this subpart shall submit to the Administrator Periodic Reports of the following information according to the schedule in § 63.152(c) of this subpart:

(1) Reports of daily average values of monitored parameters for all operating days when the daily average values were outside the range established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data are not collected for each excursion caused by insufficient monitoring data as defined in § 63.152(c)(2)(ii)(A) of this subpart.

(3) Reports of the times and durations of all periods recorded under paragraph (b)(1) of this section when the vent stream was diverted from the control device.

(4) Reports of all times recorded under paragraph (b)(2) of this section when maintenance is performed on car-sealed valves, when the car seal is broken, when the by-pass line valve position is changed, or the key for a lock-and-key type configuration has been checked out.

(5) Reports of the times and durations of all periods recorded under paragraph (a)(2)(v) of this section in which all pilot flames of a flare were absent.

(6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (a)(2)(vi) of this section were outside the ranges established in the Notification of Compliance Status or operating permit.

(e) The owner or operator of a Group 1 transfer rack shall record that the verification of DOT tank certification or Method 27 testing, required in § 63.126(e) of this subpart, has been performed. Various methods for the record of verification can be used, such as: A check off on a log sheet; a list of DOT serial numbers or Method 27 data; or a position description for gate security, showing that the security guard will not allow any trucks on site that do

not have the appropriate documentation.

(f) Each owner or operator of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in paragraphs (f)(1) through (f)(3) of this section in a readily accessible location on site:

(1) An analysis demonstrating the design and actual annual throughput of the transfer rack;

(2) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations.

(3) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack.

(i) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressures less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated.

(ii) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2750, Jan. 17, 1997]

§ 63.131 [Reserved]

§ 63.132 Process wastewater provisions—general.

(a) *Existing sources.* This paragraph specifies the requirements applicable to process wastewater streams located at existing sources. The owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(3) of this section, no later than the applicable dates specified in § 63.100 of subpart F of this part.

(1) *Determine wastewater streams to be controlled for Table 9 compounds.* Determine whether each wastewater stream requires control for Table 9 compounds

by complying with the requirements in either paragraph (a)(1)(i) or (a)(1)(ii) of this section, and comply with the requirements in paragraph (a)(1)(iii) of this section.

(i) Comply with paragraph (c) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 9 compounds; or

(ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream.

(iii) Comply with paragraph (f) of this section.

(2) *Requirements for Group 1 wastewater streams.* For wastewater streams that are Group 1 for Table 9 compounds, comply with paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators as specified in § 63.133 through § 63.137 of this subpart, except as provided in paragraphs (a)(2)(i)(A) and (a)(2)(i)(B) of this section and § 63.138(a)(3) of this subpart.

(A) The waste management units may be equipped with pressure relief devices that vent directly to the atmosphere provided the pressure relief device is not used for planned or routine venting of emissions.

(B) The pressure relief device remains in a closed position at all times except when it is necessary for the pressure relief device to open for the purpose of preventing physical damage or permanent deformation of the waste management unit in accordance with good engineering and safety practices.

(ii) Comply with the applicable requirements for control of Table 9 compounds as specified in § 63.138 of this subpart. Alternatively, the owner or operator may elect to comply with the treatment provisions specified in § 63.132(g) of this subpart.

(iii) Comply with the applicable monitoring and inspection requirements specified in § 63.143 of this subpart.

(iv) Comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146 and 63.147 of this subpart.

(3) *Requirements for Group 2 wastewater streams.* For wastewater streams that are Group 2, comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146 and 63.147 of this subpart.

(b) *New sources.* This paragraph specifies the requirements applicable to process wastewater streams located at new sources. The owner or operator shall comply with the requirements in paragraphs (b)(1) through (b)(4) of this section, no later than the applicable dates specified in § 63.100 of subpart F of this part.

(1) *Determine wastewater streams to be controlled for Table 8 compounds.* Determine whether each wastewater stream requires control for Table 8 compounds by complying with the requirements in either paragraph (b)(1)(i) or (b)(1)(ii) of this section, and comply with the requirements in paragraph (b)(1)(iii) of this section.

(i) Comply with paragraph (d) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 8 compounds; or

(ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream for Table 8 compounds.

(iii) Comply with paragraph (f) of this section.

(2) *Determine wastewater streams to be controlled for Table 9 compounds.* Determine whether each wastewater stream requires control for Table 9 compounds by complying with the requirements in either paragraph (b)(2)(i) or (b)(2)(ii) of this section, and comply with the requirements in paragraph (b)(2)(iii) of this section.

(i) Comply with paragraph (c) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 9 compounds; or

(ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream.

(iii) Comply with paragraph (f) of this section.

(3) *Requirements for Group 1 wastewater streams.* For wastewater streams that are Group 1 for Table 8 compounds and/or Table 9 compounds, comply with paragraphs (b)(3)(i) through (b)(3)(iv) of this section.

(i) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators specified in the requirements of § 63.133 through § 63.137 of this subpart, except as provided in paragraphs (b)(3)(i)(A) and (b)(3)(i)(B) of this section and § 63.138(a)(3) of this subpart.

(A) The waste management units may be equipped with pressure relief devices that vent directly to the atmosphere provided the pressure relief device is not used for planned or routine venting of emissions.

(B) The pressure relief device remains in a closed position at all times except when it is necessary for the pressure relief device to open for the purpose of preventing physical damage or permanent deformation of the waste management unit in accordance with good engineering and safety practices.

(ii) Comply with the applicable requirements for control of Table 8 compounds specified in § 63.138 of this subpart. Alternatively, the owner or operator may elect to comply with the provisions specified in § 63.132(g) of this subpart.

(iii) Comply with the applicable monitoring and inspection requirements specified in § 63.143 of this subpart.

(iv) Comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146 and 63.147 of this subpart.

(4) *Requirements for Group 2 wastewater streams.* For wastewater streams that are Group 2 for both Table 8 and Table 9 compounds, comply with the recordkeeping and reporting requirements specified in §§ 63.146 and 63.147 of this subpart.

(c) *How to determine Group 1 or Group 2 status for Table 9 compounds.* This paragraph provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 9 compounds. Total annual average concentration shall be determined according to the procedures specified in § 63.144(b) of this subpart. Annual average flow rate shall be determined according to the procedures specified in § 63.144(c) of this subpart.

(1) A wastewater stream is a Group 1 wastewater stream for Table 9 compounds if:

(i) The total annual average concentration of Table 9 compounds is greater than or equal to 10,000 parts per million by weight at any flow rate; or

(ii) The total annual average concentration of Table 9 compounds is greater than or equal to 1,000 parts per million by weight and the annual average flow rate is greater than or equal to 10 liters per minute.

(2) A wastewater stream is a Group 2 wastewater stream for Table 9 compounds if it is not a Group 1 wastewater stream for Table 9 compounds by the criteria in paragraph (c)(1) of this section.

(d) *How to determine Group 1 or Group 2 status for Table 8 compounds.* This paragraph provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 8 compounds. Annual average concentration for each Table 8 compound shall be determined according to the procedures specified in § 63.144(b) of this subpart. Annual average flow rate shall be determined according to the procedures specified in § 63.144(c) of this subpart.

(1) A wastewater stream is a Group 1 wastewater stream for Table 8 compounds if the annual average flow rate is 0.02 liter per minute or greater and the annual average concentration of any individual table 8 compound is 10 parts per million by weight or greater.

(2) A wastewater stream is a Group 2 wastewater stream for Table 8 compounds if the annual average flow rate is less than 0.02 liter per minute or the annual average concentration for each individual Table 8 compound is less than 10 parts per million by weight.

(e) *How to designate a Group 1 wastewater stream.* The owner or operator may elect to designate a wastewater stream a Group 1 wastewater stream in order to comply with paragraph (a)(1) or (b)(1) of this section. To designate a wastewater stream or a mixture of wastewater streams a Group 1 wastewater stream, the procedures specified in paragraphs (e)(1) and (e)(2) of this section and § 63.144(a)(2) of this subpart shall be followed.

(1) From the point of determination for each wastewater stream that is included in the Group 1 designation to the location where the owner or operator elects to designate such wastewater

stream(s) as a Group 1 wastewater stream, the owner or operator shall comply with all applicable emission suppression requirements specified in §§ 63.133 through 63.137.

(2) From the location where the owner or operator designates a wastewater stream or mixture of wastewater streams to be a Group 1 wastewater stream, such Group 1 wastewater stream shall be managed in accordance with all applicable emission suppression requirements specified in §§ 63.133 through 63.137 and with the treatment requirements in § 63.138 of this part.

(f) Owners or operators of sources subject to this subpart shall not discard liquid or solid organic materials with a concentration of greater than 10,000 parts per million of Table 9 compounds (as determined by analysis of the stream composition, engineering calculations, or process knowledge, according to the provisions of § 63.144(b) of this subpart) from a chemical manufacturing process unit to water or wastewater, unless the receiving stream is managed and treated as a Group 1 wastewater stream. This prohibition does not apply to materials from the activities listed in paragraphs (f)(1) through (f)(4) of this section.

(1) Equipment leaks;

(2) Activities included in maintenance or startup/shutdown/malfunction plans;

(3) Spills; or

(4) Samples of a size not greater than reasonably necessary for the method of analysis that is used.

(g) *Off-site treatment or on-site treatment not owned or operated by the source.* The owner or operator may elect to transfer a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream to an on-site treatment operation not owned or operated by the owner or operator of the source generating the wastewater stream or residual, or to an off-site treatment operation.

(1) The owner or operator transferring the wastewater stream or residual shall:

(i) Comply with the provisions specified in §§ 63.133 through 63.137 of this subpart for each waste management unit that receives or manages a Group 1 wastewater stream or residual re-

moved from a Group 1 wastewater stream prior to shipment or transport.

(ii) Include a notice with the shipment or transport of each Group 1 wastewater stream or residual removed from a Group 1 wastewater stream. The notice shall state that the wastewater stream or residual contains organic hazardous air pollutants that are to be treated in accordance with the provisions of this subpart. When the transport is continuous or ongoing (for example, discharge to a publicly-owned treatment works), the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

(2) The owner or operator may not transfer the wastewater stream or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any Group 1 wastewater stream or residual removed from a Group 1 wastewater stream received from a source subject to the requirements of this subpart in accordance with the requirements of either §§ 63.133 through 63.147, or § 63.102(b) of subpart F, or subpart D of this part if alternative emission limitations have been granted the transferor in accordance with those provisions. The certifying entity may revoke the written certification by sending a written statement to the EPA and the owner or operator giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the regulatory provisions listed in this paragraph. Upon expiration of the notice period, the owner or operator may not transfer the wastewater stream or residual to the treatment operation.

(3) By providing this written certification to the EPA, the certifying entity accepts responsibility for compliance with the regulatory provisions listed in paragraph (g)(2) of this section with respect to any shipment of wastewater or residual covered by the written certification. Failure to abide by any of those provisions with respect to such shipments may result in enforcement action by the EPA against the certifying entity in accordance with the enforcement provisions applicable

to violations of these provisions by owners or operators of sources.

(4) Written certifications and revocation statements, to the EPA from the transferees of wastewater or residuals shall be signed by the responsible official of the certifying entity, provide the name and address of the certifying entity, and be sent to the appropriate EPA Regional Office at the addresses listed in 40 CFR 63.13. Such written certifications are not transferable by the treater.

[62 FR 2751, Jan. 17, 1997]

§ 63.133 Process wastewater provisions—wastewater tanks.

(a) For each wastewater tank that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of either paragraph (a)(1) or (a)(2) of this section as specified in table 10 of this subpart.

(1) The owner or operator shall operate and maintain a fixed roof except that if the wastewater tank is used for heating wastewater, or treating by means of an exothermic reaction or the contents of the tank is sparged, the owner or operator shall comply with the requirements specified in paragraph (a)(2) of this section.

(2) The owner or operator shall comply with the requirements in paragraphs (b) through (h) of this section and shall operate and maintain one of the emission control techniques listed in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) A fixed roof and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the wastewater tank to a control device.

(ii) A fixed roof and an internal floating roof that meets the requirements specified in § 63.119(b) of this subpart;

(iii) An external floating roof that meets the requirements specified in §§ 63.119(c), 63.120(b)(5), and 63.120(b)(6) of this subpart; or

(iv) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(2)(i) through (a)(2)(iii) of this section will be evaluated according to § 63.102(b) of subpart F of this

part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(2)(iv)(A) or (a)(2)(iv)(B) of this section.

(A) Actual emissions tests that use full-size or scale-model wastewater tanks that accurately collect and measure all organic hazardous air pollutants emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(B) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(b) If the owner or operator elects to comply with the requirements of paragraph (a)(2)(i) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed-vent system shall meet the requirements of paragraph (b)(3) of this section.

(1) The fixed-roof shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(ii) Each opening shall be maintained in a closed position (e.g., covered by a lid) at all times that the wastewater tank contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for wastewater sampling, removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with the requirements of § 63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with the requirements of § 63.148 of this subpart.

(4) For any fixed roof tank and closed-vent system that is operated

and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(c) If the owner or operator elects to comply with the requirements of paragraph (a)(2)(ii) of this section, the floating roof shall be inspected according to the procedures specified in § 63.120(a)(2) and (a)(3) of this subpart.

(d) Except as provided in paragraph (e) of this section, if the owner or operator elects to comply with the requirements of paragraph (a)(2)(iii) of this section, seal gaps shall be measured according to the procedures specified in § 63.120(b)(2)(i) through (b)(4) of this subpart and the wastewater tank shall be inspected to determine compliance with § 63.120(b)(5) and (b)(6) of this subpart.

(e) If the owner or operator determines that it is unsafe to perform the seal gap measurements specified in § 63.120(b)(2)(i) through (b)(4) of this subpart or to inspect the wastewater tank to determine compliance with § 63.120(b)(5) and (b)(6) of this subpart because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (e)(1) or (e)(2) of this section.

(1) The owner or operator shall measure the seal gaps or inspect the wastewater tank within 30 calendar days of the determination that the floating roof is unsafe, or

(2) The owner or operator shall empty and remove the wastewater tank from service within 45 calendar days of determining that the roof is unsafe. If the wastewater tank cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the wastewater tank will be emptied as soon as practical.

(f) Except as provided in paragraph (e) of this section, each wastewater tank shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with § 63.143 of this subpart. For wastewater tanks, improper work practice includes, but is not limited to, leaving open any access door or other opening when such door or opening is not in use.

(g) Except as provided in paragraph (e) of this section, each wastewater tank shall be inspected for control equipment failures as defined in paragraph (g)(1) of this section according to the schedule in paragraphs (g)(2) and (g)(3) of this section.

(1) Control equipment failures for wastewater tanks include, but are not limited to, the conditions specified in paragraphs (g)(1)(i) through (g)(1)(ix) of this section.

(i) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(ii) There is stored liquid on the floating roof.

(iii) A rim seal is detached from the floating roof.

(iv) There are holes, tears, cracks or gaps in the rim seal or seal fabric of the floating roof.

(v) There are visible gaps between the seal of an internal floating roof and the wall of the wastewater tank.

(vi) There are gaps between the metallic shoe seal or the liquid mounted primary seal of an external floating roof and the wall of the wastewater tank that exceed 212 square centimeters per meter of tank diameter or the width of any portion of any gap between the primary seal and the tank wall exceeds 3.81 centimeters.

(vii) There are gaps between the secondary seal of an external floating roof and the wall of the wastewater tank that exceed 21.2 square centimeters per meter of tank diameter or the width of any portion of any gap between the secondary seal and the tank wall exceeds 1.27 centimeters.

(viii) Where a metallic shoe seal is used on an external floating roof, one end of the metallic shoe does not extend into the stored liquid or one end of the metallic shoe does not extend a

minimum vertical distance of 61 centimeters above the surface of the stored liquid.

(ix) A gasket, joint, lid, cover, or door has a crack or gap, or is broken.

(2) The owner or operator shall inspect for the control equipment failures in paragraphs (g)(1)(i) through (g)(1)(viii) of this section according to the schedule specified in paragraphs (c) and (d) of this section.

(3) The owner or operator shall inspect for the control equipment failures in paragraph (g)(1)(ix) of this section initially, and semi-annually thereafter.

(h) Except as provided in §63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification. If a failure that is detected during inspections required by paragraphs (a)(2)(i) or (a)(3)(ii) of this section cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

[62 FR 2753, Jan. 17, 1997]

§63.134 Process wastewater provisions—surface impoundments.

(a) For each surface impoundment that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) of this section.

(b) The owner or operator shall operate and maintain on each surface impoundment either a cover (e.g., air-supported structure or rigid cover) and a closed-vent system that routes the organic hazardous air pollutants vapors vented from the surface impoundment

to a control device in accordance with paragraph (b)(1) of this section, or a floating flexible membrane cover as specified in paragraph (b)(2) of this section.

(1) The cover and all openings shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in §63.148 of this subpart.

(ii) Each opening shall be maintained in a closed position (e.g., covered by a lid) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the surface impoundment except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.

(iii) The cover shall be used at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228.

(2) Floating flexible membrane covers shall meet the requirements specified in paragraphs (b)(2)(i) through (b)(2)(vii) of this section.

(i) The floating flexible cover shall be designed to float on the liquid surface during normal operations, and to form a continuous barrier over the entire surface area of the liquid.

(ii) The cover shall be fabricated from a synthetic membrane material that is either:

(A) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (100 mils); or

(B) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in paragraph (b)(2)(i) of this section, and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(iii) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open

spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(iv) Except as provided for in paragraph (b)(2)(v) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(v) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(vi) The closure devices shall be made of suitable materials that will minimize exposure of organic hazardous air pollutants to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered in designing the closure devices shall include: The effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(vii) Whenever a Group 1 wastewater stream or residual from a Group 1 wastewater stream is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position. Opening of closure devices or removal of the cover is allowed to provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations and/or to remove accumulated sludge or other residues from the bottom of surface impoundment. Openings shall be maintained in accordance with § 63.148 of this subpart.

(3) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.

(4) Except as provided in paragraph (b)(5) of this section, the closed-vent system shall be inspected in accordance with § 63.148 of this subpart.

(5) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(c) Each surface impoundment shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with § 63.143 of this subpart.

(1) For surface impoundments, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.

(2) For surface impoundments, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a crack or gap, or is broken.

(d) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

[62 FR 2754, Jan. 17, 1997]

§ 63.135 Process wastewater provisions—containers.

(a) For each container that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b) through (f) of this section.

(b) The owner or operator shall operate and maintain a cover on each container used to handle, transfer, or store a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the following requirements:

(1) Except as provided in paragraph (d)(4) of this section, if the capacity of the container is greater than 0.42 m³, the cover and all openings (e.g., bungs, hatches, sampling ports, and pressure relief devices) shall be maintained in

accordance with the requirements specified in § 63.148 of this subpart.

(2) If the capacity of the container is less than or equal to 0.42 m³, the owner or operator shall comply with either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) The container must meet existing Department of Transportation specifications and testing requirements under 49 CFR part 178; or

(ii) Except as provided in paragraph (d)(4) of this section, the cover and all openings shall be maintained without leaks as specified in § 63.148 of this subpart.

(3) The cover and all openings shall be maintained in a closed position (e.g., covered by a lid) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the container except when it is necessary to use the opening for filling, removal, inspection, sampling, or pressure relief events related to safety considerations.

(c) For containers with a capacity greater than or equal to 0.42 m³, a submerged fill pipe shall be used when a container is being filled by pumping with a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream.

(1) The submerged fill pipe outlet shall extend to no more than 6 inches or within two fill pipe diameters of the bottom of the container while the container is being filled.

(2) The cover shall remain in place and all openings shall be maintained in a closed position except for those openings required for the submerged fill pipe and for venting of the container to prevent physical damage or permanent deformation of the container or cover.

(d) During treatment of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, including aeration, thermal or other treatment, in a container, whenever it is necessary for the container to be open, the container shall be located within an enclosure with a closed-vent system that routes the organic hazardous air pollutants vapors vented from the container to a control device.

(1) Except as provided in paragraph (d)(4) of this section, the enclosure and all openings (e.g., doors, hatches) shall

be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(2) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.

(3) Except as provided in paragraph (d)(4) of this section, the closed-vent system shall be inspected in accordance with § 63.148 of this subpart.

(4) For any enclosure and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(e) Each container shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with § 63.143 of this subpart.

(1) For containers, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.

(2) For containers, control equipment failure includes, but is not limited to, any time a cover or door has a gap or crack, or is broken.

(f) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

[62 FR 2755, Jan. 17, 1997]

§ 63.136 Process wastewater provisions—individual drain systems.

(a) For each individual drain system that receives or manages a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) or with paragraphs (e), (f), and (g) of this section.

(b) If the owner or operator elects to comply with this paragraph, the owner or operator shall operate and maintain on each opening in the individual drain system a cover and if vented, route the vapors to a process or through a closed vent system to a control device. The owner or operator shall comply with

the requirements of paragraphs (b)(1) through (b)(5) of this section.

(1) The cover and all openings shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

(ii) The cover and all openings shall be maintained in a closed position at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the drain system except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with § 63.148 of this subpart.

(4) For any cover and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.

(5) The individual drain system shall be designed and operated to segregate the vapors within the system from other drain systems and the atmosphere.

(c) Each individual drain system shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures, in accordance with the inspection requirements specified in table 11 of this subpart.

(1) For individual drain systems, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) For individual drain systems, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a gap or crack, or is broken.

(d) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure

is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

(e) If the owner or operator elects to comply with this paragraph, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(3) of this section:

(1) Each drain shall be equipped with water seal controls or a tightly fitting cap or plug. The owner or operator shall comply with paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) For each drain equipped with a water seal, the owner or operator shall ensure that the water seal is maintained. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap. Visual observation is also an acceptable alternative.

(ii) If a water seal is used on a drain receiving a Group 1 wastewater, the owner or operator shall either extend the pipe discharging the wastewater below the liquid surface in the water seal of the receiving drain, or install a flexible shield (or other enclosure which restricts wind motion across the open area between the pipe and the drain) that encloses the space between the pipe discharging the wastewater to the drain receiving the wastewater. (Water seals which are used on hubs receiving Group 2 wastewater for the purpose of eliminating cross ventilation to drains carrying Group 1 wastewater are not required to have a flexible cap or extended subsurface discharging pipe.)

(2) Each junction box shall be equipped with a tightly fitting solid cover (i.e., no visible gaps, cracks, or holes) which shall be kept in place at all times except during inspection and maintenance. If the junction box is vented, the owner or operator shall comply with the requirements in paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(i) The junction box shall be vented to a process or through a closed vent system to a control device. The closed vent system shall be inspected in accordance with the requirements of

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§63.148 and the control device shall be designed, operated, and inspected in accordance with the requirements of §63.139.

(ii) If the junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level, the owner or operator may vent the junction box to the atmosphere provided that the junction box complies with the requirements in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) The vent pipe shall be at least 90 centimeters in length and no greater than 10.2 centimeters in nominal inside diameter.

(B) Water seals shall be installed and maintained at the wastewater entrance(s) to or exit from the junction box restricting ventilation in the individual drain system and between components in the individual drain system. The owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.

(3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visible gaps or cracks in joints, seals, or other emission interfaces.

(f) Equipment used to comply with paragraphs (e)(1), (e)(2), or (e)(3) of this section shall be inspected as follows:

(1) Each drain using a tightly fitting cap or plug shall be visually inspected initially, and semi-annually thereafter, to ensure caps or plugs are in place and that there are no gaps, cracks, or other holes in the cap or plug.

(2) Each junction box shall be visually inspected initially, and semi-annually thereafter, to ensure that there are no gaps, cracks, or other holes in the cover.

(3) The unburied portion of each sewer line shall be visually inspected initially, and semi-annually thereafter, for indication of cracks or gaps that could result in air emissions.

(g) Except as provided in §63.140 of this subpart, when a gap, hole, or crack is identified in a joint or cover, first efforts at repair shall be made no later than 5 calendar days after identifica-

tion, and repair shall be completed within 15 calendar days after identification.

[62 FR 2755, Jan. 17, 1997]

§ 63.137 Process wastewater provisions—oil-water separators.

(a) For each oil-water separator that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (c) and (d) of this section and shall operate and maintain one of the following:

(1) A fixed roof and a closed vent system that routes the organic hazardous air pollutants vapors vented from the oil-water separator to a control device. The fixed roof, closed-vent system, and control device shall meet the requirements specified in paragraph (b) of this section;

(2) A floating roof meeting the requirements in 40 CFR part 60, subpart QQQ §60.693-2(a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4). For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, the owner or operator shall operate and maintain a fixed roof, closed vent system, and control device that meet the requirements specified in paragraph (b) of this section.

(3) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(1) and (a)(2) of this section will be evaluated according to §63.102(b) of subpart F of this part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(3)(i) or (a)(3)(ii) of this section.

(i) Actual emissions tests that use full-size or scale-model oil-water separators that accurately collect and measure all organic hazardous air pollutants emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or

(ii) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(b) If the owner or operator elects to comply with the requirements of paragraphs (a)(1) or (a)(2) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed-vent system shall meet the requirements of paragraph (b)(3) of this section.

(1) The fixed-roof shall meet the following requirements:

(i) Except as provided in paragraph (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in §63.148 of this subpart.

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the oil-water separator contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.

(2) The control device shall be designed, operated, and inspected in accordance with the requirements of §63.139 of this subpart.

(3) Except as provided in paragraph (b)(4) of this section, the closed-vent system shall be inspected in accordance with the requirements of §63.148 of this subpart.

(4) For any fixed roof and closed-vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements of §63.148 of this subpart.

(c) If the owner or operator elects to comply with the requirements of paragraph (a)(2) of this section, seal gaps shall be measured according to the procedures specified in 40 CFR part 60, subpart QQQ §60.696(d)(1) and the schedule specified in paragraphs (c)(1) and (c)(2) of this section.

(1) Measurement of primary seal gaps shall be performed within 60 calendar

days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every 5 years thereafter.

(2) Measurement of secondary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every year thereafter.

(d) Each oil-water separator shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with §63.143 of this subpart. For oil-water separators, improper work practice includes, but is not limited to, leaving open or ungasketed any access door or other opening when such door or opening is not in use.

(e) Each oil-water separator shall be inspected for control equipment failures as defined in paragraph (e)(1) of this section according to the schedule specified in paragraphs (e)(2) and (e)(3) of this section.

(1) For oil-water separators, control equipment failure includes, but is not limited to, the conditions specified in paragraphs (e)(1)(i) through (e)(1)(vii) of this section.

(i) The floating roof is not resting on either the surface of the liquid or on the leg supports.

(ii) There is stored liquid on the floating roof.

(iii) A rim seal is detached from the floating roof.

(iv) There are holes, tears, or other open spaces in the rim seal or seal fabric of the floating roof.

(v) There are gaps between the primary seal and the separator wall that exceed 67 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the primary seal and the separator wall exceeds 3.8 centimeters.

(vi) There are gaps between the secondary seal and the separator wall that exceed 6.7 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the secondary seal and the separator wall exceeds 1.3 centimeters.

(vii) A gasket, joint, lid, cover, or door has a gap or crack, or is broken.

(2) The owner or operator shall inspect for the control equipment failures in paragraphs (e)(1)(i) through (e)(1)(vi) of this section according to the schedule specified in paragraph (c) of this section.

(3) The owner or operator shall inspect for control equipment failures in paragraph (e)(1)(vii) of this section initially, and semi-annually thereafter.

(f) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

[62 FR 2756, Jan. 17, 1997]

§ 63.138 Process wastewater provisions—performance standards for treatment processes managing Group 1 wastewater streams and/or residuals removed from Group 1 wastewater streams.

(a) *General requirements.* This section specifies the performance standards for treating Group 1 wastewater streams. The owner or operator shall comply with the requirements as specified in paragraphs (a)(1) through (a)(6) of this section. Where multiple compliance options are provided, the options may be used in combination for different wastewater streams and/or for different compounds (e.g., Table 8 versus Table 9 compounds) in the same wastewater streams, except where otherwise provided in this section. Once a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream has been treated in accordance with this subpart, it is no longer subject to the requirements of this subpart.

(1) *Existing source.* If the wastewater stream, at an existing source, is Group 1 for Table 9 compounds, comply with § 63.138(b).

(2) *New source.* If the wastewater stream, at a new source, is Group 1 for Table 8 compounds, comply with § 63.138(c). If the wastewater stream, at a new source, is Group 1 for Table 9 compounds, comply with § 63.138(b). If the wastewater stream, at a new source, is Group 1 for Table 8 and Table 9 compounds, comply with both § 63.138(b) and § 63.138(c).

Note to paragraph (a)(2): The requirements for Table 8 and/or Table 9 compounds are similar and often identical.

(3) *Biological treatment processes.* Biological treatment processes in compliance with this section may be either open or closed biological treatment processes as defined in § 63.111. An open biological treatment process in compliance with this section need not be covered and vented to a control device as required in § 63.133 through § 63.137 of this subpart. An open or a closed biological treatment process in compliance with this section and using § 63.145(f) or § 63.145(g) of this subpart to demonstrate compliance is not subject to the requirements of § 63.133 through § 63.137 of this subpart. A closed biological treatment process in compliance with this section and using § 63.145(e) of this subpart to demonstrate compliance shall comply with the requirements of § 63.133 through § 63.137 of this subpart. Waste management units upstream of an open or closed biological treatment process shall meet the requirements of § 63.133 through § 63.137 of this subpart, as applicable.

(4) *Performance tests and design evaluations.* If design steam stripper option (§ 63.138(d)) or Resource Conservation and Recovery Act (RCRA) option (§ 63.138(h)) is selected to comply with this section, neither a design evaluation nor a performance test is required. For any other non-biological treatment process, and for closed biological treatment processes as defined in § 63.111 of this subpart, the owner or operator shall conduct either a design evaluation as specified in § 63.138(j), or a performance test as specified in § 63.145, of this subpart. For each open biological treatment process as defined in § 63.111 of this subpart, the owner or operator shall conduct a performance test as specified in § 63.145 of this subpart.

Note to paragraph (a)(4): Some open biological treatment processes may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine whether the biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

(5) *Control device requirements.* When gases are vented from the treatment process, the owner or operator shall

comply with the applicable control device requirements specified in § 63.139 and § 63.145 (i) and (j), and the applicable leak inspection provisions specified in § 63.148, of this subpart. This requirement does not apply to any open biological treatment process that meets the mass removal requirements. Vents from anaerobic biological treatment processes may be routed through hard-piping to a fuel gas system.

(6) *Residuals: general.* When residuals result from treating Group 1 wastewater streams, the owner or operator shall comply with the requirements for residuals specified in § 63.138(k) of this subpart.

(7) *Treatment using a series of treatment processes.* In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process or control device to comply with emissions limitations, the owner or operator may use multiple treatment processes or control devices, respectively. For combinations of treatment processes where the wastewater stream is conveyed by hard-piping, the owner or operator shall comply with either the requirements of paragraph (a)(7)(i) or (a)(7)(ii) of this section. For combinations of treatment processes where the wastewater stream is not conveyed by hard-piping, the owner or operator shall comply with the requirements of paragraph (a)(7)(ii) of this section. For combinations of control devices, the owner or operator shall comply with the requirements of paragraph (a)(7)(i) of this section.

(i)(A) For combinations of treatment processes, the wastewater stream shall be conveyed by hard-piping between the treatment processes. For combinations of control devices, the vented gas stream shall be conveyed by hard-piping between the control devices.

(B) For combinations of treatment processes, each treatment process shall meet the applicable requirements of § 63.133 through § 63.137 of this subpart except as provided in paragraph (a)(3) of this section.

(C) The owner or operator shall identify, and keep a record of, the combination of treatment processes or of control devices, including identification of the first and last treatment process or control device. The owner or operator

shall include this information as part of the treatment process description reported in the Notification of Compliance Status.

(D) The performance test or design evaluation shall determine compliance across the combination of treatment processes or control devices. If a performance test is conducted, the “inlet” shall be the point at which the wastewater stream or residual enters the first treatment process, or the vented gas stream enters the first control device. The “outlet” shall be the point at which the treated wastewater stream exits the last treatment process, or the vented gas stream exits the last control device.

(ii)(A) For combinations of treatment processes, each treatment process shall meet the applicable requirements of § 63.133 through § 63.137 of this subpart except as provided in paragraph (a)(3) of this section.

(B) The owner or operator shall identify, and keep a record of, the combination of treatment processes, including identification of the first and last treatment process. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status.

(C) The owner or operator shall determine the mass removed or destroyed by each treatment process. The performance test or design evaluation shall determine compliance for the combination of treatment processes by adding together the mass removed or destroyed by each treatment process.

(b) *Control options: Group 1 wastewater streams for Table 9 compounds.* The owner or operator shall comply with either paragraph (b)(1) or (b)(2) of this section for the control of Table 9 compounds at new or existing sources.

(1) *50 ppmw concentration option.* The owner or operator shall comply with paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(i) Reduce, by removal or destruction, the total concentration of Table 9 compounds to a level less than 50 parts per million by weight as determined by the procedures specified in § 63.145(b) of this subpart.

(ii) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater stream is designated as a Group 1 wastewater stream as specified in § 63.132(e). Dilution shall not be used to achieve compliance with this option.

(2) *Other compliance options.* Comply with the requirements specified in any one of paragraphs (d), (e), (f), (g), (h), or (i) of this section.

(c) *Control options: Group 1 wastewater streams for Table 8 compounds.* The owner or operator shall comply with either paragraph (c)(1) or (c)(2) of this section for the control of Table 8 compounds at new sources.

(1) *10 ppmw concentration option.* The owner or operator shall comply with paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(i) Reduce, by removal or destruction, the concentration of the individual Table 8 compounds to a level less than 10 parts per million by weight as determined in the procedures specified in § 63.145(b) of this subpart.

(ii) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater stream is designated as a Group 1 wastewater stream as specified in § 63.132(e). Dilution shall not be used to achieve compliance with this option.

(2) *Other compliance options.* Comply with the requirements specified in any one of paragraphs (d), (e), (f), (g), (h), or (i) of this section.

(d) *Design steam stripper option.* The owner or operator shall operate and maintain a steam stripper that meets the requirements of paragraphs (d)(1) through (d)(6) of this section.

(1) Minimum active column height of 5 meters,

(2) Countercurrent flow configuration with a minimum of 10 actual trays,

(3) Minimum steam flow rate of 0.04 kilograms of steam per liter of wastewater feed within the column,

(4) Minimum wastewater feed temperature to the steam stripper of 95 °C, or minimum column operating temperature of 95 °C,

(5) Maximum liquid loading of 67,100 liters per hour per square meter, and

(6) Operate at nominal atmospheric pressure.

(e) *Percent mass removal/destruction option.* The owner or operator of a new or existing source shall comply with paragraph (e)(1) or (e)(2) of this section for control of Table 8 and/or Table 9 compounds for Group 1 wastewater streams. This option shall not be used for biological treatment processes.

(1) *Reduce mass flow rate of Table 8 and/or Table 9 compounds by 99 percent.* For wastewater streams that are Group 1, the owner or operator shall reduce, by removal or destruction, the mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more. The removal/destruction efficiency shall be determined by the procedures specified in § 63.145(c), for noncombustion processes, or § 63.145(d), for combustion processes.

(2) *Reduce mass flow rate of Table 8 and/or Table 9 compounds by Fr value.* For wastewater streams that are Group 1 for Table 8 and/or Table 9 compounds, the owner or operator shall reduce, by removal or destruction, the mass flow rate by at least the fraction removal (Fr) values specified in Table 9 of this subpart. (The Fr values for Table 8 compounds are all 0.99.) The removal/destruction efficiency shall be determined by the procedures specified in § 63.145(c), for noncombustion treatment processes, or § 63.145(d), for combustion treatment processes.

(f) *Required mass removal (RMR) option.* The owner or operator shall achieve the required mass removal (RMR) of Table 8 compounds at a new source for a wastewater stream that is Group 1 for Table 8 compounds and/or of Table 9 compounds at a new or existing source for a wastewater stream that is Group 1 for Table 9 compounds. For nonbiological treatment processes compliance shall be determined using the procedures specified in § 63.145(e) of this subpart. For aerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145 (e) or (f) of this subpart. For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145(e) of this subpart. For open biological treatment processes compliance shall be determined

using the procedures specified in § 63.145(f) of this subpart.

(g) *95-percent RMR option, for biological treatment processes.* The owner or operator of a new or existing source using biological treatment for at least one wastewater stream that is Group 1 for Table 9 compounds shall achieve a RMR of at least 95 percent for all Table 9 compounds. The owner or operator of a new source using biological treatment for at least one wastewater stream that is Group 1 for Table 8 compounds shall achieve a RMR of at least 95 percent for all Table 8 compounds. All Group 1 and Group 2 wastewater streams entering a biological treatment unit that are from chemical manufacturing process units subject to subpart F shall be included in the demonstration of the 95-percent mass removal. The owner or operator shall comply with paragraphs (g)(1) through (g)(4) of this section.

(1) Except as provided in paragraph (g)(4) of this section, the owner or operator shall ensure that all Group 1 and Group 2 wastewater streams from chemical manufacturing process units subject to this rule entering a biological treatment unit are treated to destroy at least 95-percent total mass of all Table 8 and/or Table 9 compounds.

(2) For open biological treatment processes compliance shall be determined using the procedures specified in § 63.145(g) of this subpart. For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145 (e) or (g) of this subpart. For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145(e) of this subpart.

(3) For each treatment process or waste management unit that receives, manages, or treats wastewater streams subject to this paragraph, from the point of determination of each Group 1 or Group 2 wastewater stream to the biological treatment unit, the owner or operator shall comply with §§ 63.133 through § 63.137 of this subpart for control of air emissions. When complying with this paragraph, the term Group 1, whether used alone or in combination with other terms, in § 63.133 through

§ 63.137 of this subpart shall mean both Group 1 and Group 2.

(4) If a wastewater stream is in compliance with the requirements in paragraph (b)(1), (c)(1), (d), (e), (f), or (h) of this section before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not required to be included in the total mass flow rate entering the biological treatment unit for the purpose of demonstrating compliance.

(h) *Treatment in a RCRA unit option.* The owner or operator shall treat the wastewater stream or residual in a unit identified in, and complying with, paragraph (h)(1), (h)(2), or (h)(3) of this section. These units are exempt from the design evaluation or performance tests requirements specified in § 63.138(a)(3) and § 63.138(j) of this subpart, and from the monitoring requirements specified in § 63.132(a)(2)(iii) and § 63.132(b)(3)(iii) of this subpart, as well as recordkeeping and reporting requirements associated with monitoring and performance tests.

(1) The wastewater stream or residual is discharged to a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O;

(2) The wastewater stream or residual is discharged to a process heater or boiler burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(3) The wastewater stream or residual is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 or 40 CFR part 144 and complies with the requirements of 40 CFR part 122. The owner or operator shall comply with all applicable requirements of this subpart prior to the point where the wastewater enters the underground portion of the injection well.

(i) *One megagram total source mass flow rate option.* A wastewater stream is exempt from the requirements of paragraphs (b) and (c) of this section if the owner or operator elects to comply with either paragraph (i)(1) or (i)(2) of this section.

(1) *All Group 1 wastewater streams at the source.* The owner or operator shall demonstrate that the total source mass flow rate for Table 8 and/or Table 9 compounds is less than 1 megagram per year using the procedures in paragraphs (i)(1)(i) and (i)(1)(ii) of this section. The owner or operator shall include all Group 1 wastewater streams at the source in the total source mass flow rate. The total source mass flow rate shall be based on the mass as calculated before the wastewater stream is treated.

(i) Calculate the annual average mass flow rate for each Group 1 wastewater stream by multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in §63.144(c), times the total annual average concentration of Table 8 and/or Table 9 compounds, as determined by procedures specified in §63.144(b) of this subpart. (The mass flow rate of compounds in a wastewater stream that is Group 1 for both Table 8 and Table 9 compounds should be included in the annual average mass flow rate only once.)

(ii) Calculate the total source mass flow rate from all Group 1 wastewater streams by adding together the annual average mass flow rate calculated for each Group 1 wastewater stream.

(2) *Untreated and partially treated Group 1 wastewater streams.* The owner or operator shall demonstrate that the total source mass flow rate for untreated Group 1 wastewater streams and Group 1 wastewater streams treated to levels less stringent than required in paragraph (b) or (c) of this section is less than 1 megagram per year using the procedures in paragraphs (i)(2)(i) and (i)(2)(ii) of this section. The owner or operator shall manage these wastewater streams in accordance with paragraph (i)(2)(iii) of this section, and shall comply with paragraph (i)(2)(iv) of this section.

(i) Calculate the annual average mass flow rate in each wastewater stream by

multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in §63.144(c), times the total annual average concentration of Table 8 and/or Table 9 compounds, as determined by procedures specified in §63.144(b). (The mass flow rate of compounds in a wastewater stream that are Group 1 for both Table 8 and Table 9 compounds should be included in the annual average mass flow rate only once.)

(A) For each untreated Group 1 wastewater stream, the annual average flow rate and the total annual average concentration shall be determined for that stream's point of determination.

(B) For each Group 1 wastewater stream that is treated to levels less stringent than those required by paragraph (b) or (c) of this section, the annual average flow rate and total annual average concentration shall be determined at the discharge from the treatment process or series of treatment processes.

(C) The annual average mass flow rate for Group 1 wastewater streams treated to the levels required by paragraph (b) or (c) of this section is not included in the calculation of the total source mass flow rate.

(ii) The total source mass flow rate shall be calculated by summing the annual average mass flow rates from all Group 1 wastewater streams, except those excluded by paragraph (i)(2)(i)(C) of this section.

(iii) The owner or operator of each waste management unit that receives, manages, or treats the wastewater stream prior to or during treatment shall comply with the requirements of §§63.133 through 63.137 of this subpart, as applicable.

(iv) Wastewater streams included in this option shall be identified in the Notification of Compliance Status required by §63.152(b).

(j) *Design evaluations or performance tests for treatment processes.* Except as provided in paragraph (j)(3) or (h) of this section, the owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each nonbiological treatment process used to comply with paragraphs (b)(1), (c)(1), (e), and/or (f) of this section achieves the conditions

specified for compliance. The owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each closed biological treatment process used to comply with paragraphs (f) or (g) of this section achieves the conditions specified for compliance. If an open biological treatment unit is used to comply with paragraph (f) or (g) of this section, the owner or operator shall comply with § 63.145(f) or § 63.145(g), respectively, of this subpart. Some biological treatment processes may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine whether the open biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

(1) A design evaluation and supporting documentation that addresses the operating characteristics of the treatment process and that is based on operation at a representative wastewater stream flow rate and a concentration under which it would be most difficult to demonstrate compliance. For closed biological treatment processes, the actual mass removal shall be determined by a mass balance over the unit. The mass flow rate of Table 8 or Table 9 compounds exiting the treatment process shall be the sum of the mass flow rate of Table 8 or Table 9 compounds in the wastewater stream exiting the biological treatment process and the mass flow rate of the vented gas stream exiting the control device. The mass flow rate entering the treatment process minus the mass flow rate exiting the process determines the actual mass removal.

(2) Performance tests conducted using test methods and procedures that meet the applicable requirements specified in § 63.145 of this subpart.

(3) The provisions of paragraphs (j)(1) and (j)(2) of this section do not apply to design stream strippers which meet the requirements of paragraph (d) of this section.

(k) *Residuals.* For each residual removed from a Group 1 wastewater stream, the owner or operator shall control for air emissions by complying with §§ 63.133–137 of this subpart and by complying with one of the provisions in

paragraphs (k)(1) through (k)(4) of this section.

(1) Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.

(2) Return the residual to the treatment process.

(3) Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in § 63.145(c) or (d) of this subpart.

(4) Comply with the requirements for RCRA treatment options specified in § 63.138(h) of this subpart.

[62 FR 2757, Jan. 17, 1997]

§ 63.139 Process wastewater provisions—control devices.

(a) For each control device or combination of control devices used to comply with the provisions in §§ 63.133 through 63.138 of this subpart, the owner or operator shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (b) through (f) of this section.

(b) Whenever organic hazardous air pollutants emissions are vented to a control device which is used to comply with the provisions of this subpart, such control device shall be operating.

(c) The control device shall be designed and operated in accordance with paragraph (c)(1), (c)(2), (c)(3), (c)(4), or (c)(5) of this section.

(1) An enclosed combustion device (including but not limited to a vapor incinerator, boiler, or process heater) shall meet the conditions in paragraph (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, alone or in combination with other control devices. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(i) Reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device by 95 percent by weight or greater;

(ii) Achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume on a dry basis corrected to 3 percent oxygen. The owner or operator shall use either Method 18 of 40 CFR part 60, appendix A, or any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part; or

(iii) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760° C.

(2) A vapor recovery system (including but not limited to a carbon adsorption system or condenser), alone or in combination with other control devices, shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device of 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of § 63.134 or § 63.135 of this subpart.

(3) A flare shall comply with the requirements of § 63.11(b) of subpart A of this part.

(4) A scrubber, alone or in combination with other control devices, shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions in such a manner that 95 weight-percent is either removed, or destroyed by chemical reaction with the scrubbing liquid or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of § 63.134 or § 63.135 of this subpart.

(5) Any other control device used shall, alone or in combination with other control devices, reduce the total organic compound emissions, less

methane and ethane, or total organic hazardous air pollutants emissions vented to the control device by 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of § 63.134 or § 63.135 of this subpart.

(d) Except as provided in paragraph (d)(4) of this section, an owner or operator shall demonstrate that each control device or combination of control devices achieves the appropriate conditions specified in paragraph (c) of this section by using one or more of the methods specified in paragraphs (d)(1), (d)(2), or (d)(3) of this section.

(1) Performance tests conducted using the test methods and procedures specified in § 63.145(i) of this subpart for control devices other than flares; or

(2) A design evaluation that addresses the vent stream characteristics and control device operating parameters specified in paragraphs (d)(2)(i) through (d)(2)(vii) of this section.

(i) For a thermal vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(ii) For a catalytic vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(iii) For a boiler or process heater, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall describe the method and location where the vent stream is introduced into the flame zone.

(iv) For a condenser, the design evaluation shall consider the vent stream

composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(v) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration stream mass or volumetric flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(vi) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device such as a carbon canister, the design evaluation shall consider the vent stream composition, constituent concentrations, mass or volumetric flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(vii) For a scrubber, the design evaluation shall consider the vent stream composition; constituent concentrations; liquid-to-vapor ratio; scrubbing liquid flow rate and concentration; temperature; and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation shall establish the design exhaust vent stream organic compound concentration level and will include the additional information in paragraphs (d)(2)(vii)(A) and

(d)(2)(vii)(B) of this section for trays and a packed column scrubber.

(A) Type and total number of theoretical and actual trays;

(B) Type and total surface area of packing for entire column, and for individual packed sections if column contains more than one packed section.

(3) For flares, the compliance determination specified in § 63.11(b) of subpart A of this part and § 63.145(j) of this subpart.

(4) An owner or operator using any control device specified in paragraphs (d)(4)(i) through (d)(4)(iv) of this section is exempt from the requirements in paragraphs (d)(1) through (d)(3) of this section and from the requirements in § 63.6(f) of subpart A of this part.

(i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(ii) A boiler or process heater into which the emission stream is introduced with the primary fuel.

(iii) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(iv) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(e) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with § 63.143 of this subpart.

(f) Except as provided in § 63.140 of this subpart, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar

days after identification or discovery of the defect.

[62 FR 2760, Jan. 17, 1997]

§ 63.140 Process wastewater provisions—delay of repair.

(a) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.101 of subpart F of this part, or if the owner or operator determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown.

(b) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied or is no longer used to treat or manage Group 1 wastewater streams or residuals removed from Group 1 wastewater streams.

(c) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the owner or operator. Repair shall be completed as soon as practical. The owner or operator who uses this provision shall comply with the requirements of § 63.147(c)(7) to document the reasons that the delay of repair was necessary.

[62 FR 2762, Jan. 17, 1997]

§§ 63.141–63.142 [Reserved]

§ 63.143 Process wastewater provisions—inspections and monitoring of operations.

(a) For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the inspection requirements specified in table 11 of this subpart.

(b) For each design steam stripper and biological treatment unit used to comply with § 63.138 of this subpart, the owner or operator shall comply with the monitoring requirements specified in table 12 of this subpart.

(c) If the owner or operator elects to comply with Item 1 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in § 63.151(f) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The owner or operator shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(d) If the owner or operator elects to comply with Item 3 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in § 63.151(f) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(e) Except as provided in paragraphs (e)(4) and (e)(5) of this section, for each control device used to comply with the requirements of §§ 63.133 through 63.139 of this subpart, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart, and with the requirements specified in paragraph (e)(1), (e)(2), or (e)(3) of this section.

(1) The owner or operator shall comply with the monitoring requirements specified in table 13 of this subpart; or

(2) The owner or operator shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in § 63.111 of this subpart; or

(3) The owner or operator shall request approval to monitor parameters other than those specified in paragraphs (e)(1) and (e)(2) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

(4) For a boiler or process heater in which all vent streams are introduced with primary fuel, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(5) For a boiler or process heater with a design heat input capacity of 44 megawatts or greater, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(f) For each parameter monitored in accordance with paragraph (c), (d), or (e) of this section, the owner or operator shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the owner or operator shall comply with the requirements specified in §§ 63.146(b)(7)(ii)(A) and (b)(8)(ii) of this subpart.

(g) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

[62 FR 2762, Jan. 17, 1997]

§ 63.144 Process wastewater provisions—test methods and procedures for determining applicability and Group 1/Group 2 determinations (determining which wastewater streams require control).

(a) *Procedures to determine applicability.* An owner or operator shall comply with paragraph (a)(1) or (a)(2) of this section for each wastewater stream to determine which wastewater streams require control for Table 8 and/or Table 9 compounds. The owner or operator may use a combination of the approaches in paragraphs (a)(1) and (a)(2) of this section for different wastewater streams generated at the source.

(1) *Determine Group 1 or Group 2 status.* Determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with paragraphs (b) and (c) of this section.

(2) *Designate as Group 1.* An owner or operator may designate as a Group 1 wastewater stream a single wastewater stream or a mixture of wastewater streams. The owner or operator is not required to determine the concentration or flow rate for each designated Group 1 wastewater stream for the purposes of this section.

(b) *Procedures to establish concentrations, when determining Group status under paragraph (a)(1) of this section.* An owner or operator who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the annual average concentration for Table 8 and/or Table 9 compounds according to paragraph (b)(1) of this section for existing sources or paragraph (b)(2) of this section for new sources. The annual average concentration shall be a flow weighted average representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12 month period. For flexible operation units, the owner or operator shall consider the anticipated production over the designated 12 month period and include all wastewater streams generated by the process equipment during this period. The

owner/operator is not required to determine the concentration of Table 8 or Table 9 compounds that are not reasonably expected to be in the process.

(1) *Existing sources.* An owner or operator of an existing source who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the flow weighted total annual average concentration for Table 9 compounds. For the purposes of this section, the term concentration, whether concentration is used alone or with other terms, may be adjusted by multiplying by the compound-specific fraction measured (Fm) factors listed in table 34 of this subpart unless determined by the methods in § 63.144(b)(5)(i)(A) and/or (B). When concentration is determined by Method 305 as specified in § 63.144(b)(5)(i)(B), concentration may be adjusted by dividing by the compound-specific Fm factors listed in table 34 of this subpart. When concentration is determined by Method 25D as specified in § 63.144(b)(5)(i)(A), concentration may not be adjusted by the compound-specific Fm factors listed in table 34 of this subpart. Compound-specific Fm factors may be used only when concentrations of individual compounds are determined or when only one compound is in the wastewater stream. Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. The total annual average concentration shall be determined for each wastewater stream either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. The procedures specified in paragraphs (b)(3), (b)(4), and (b)(5) of this section are considered acceptable procedures for determining the annual average concentration. They may be used in combination, and no one procedure shall take precedence over another.

(2) *New sources.* An owner or operator of a new source who elects to comply with the requirements of paragraph

(a)(1) of this section shall determine both the flow weighted total annual average concentration for Table 9 compounds and the flow weighted annual average concentration for each Table 8 compound. For the purposes of this section, the term concentration, whether concentration is used alone or with other terms, may be adjusted by multiplying by the compound-specific Fm factors listed in table 34 of this subpart unless determined by the methods in § 63.144(b)(5)(i)(A) and/or (B). When concentration is determined by Method 305 as specified in § 63.144(b)(5)(i)(B), concentration may be adjusted by dividing by the compound-specific Fm factors listed in table 34 of this subpart. When concentration is determined by Method 25D as specified in § 63.144(b)(5)(i)(A), concentration may not be adjusted by the compound-specific Fm factors listed in table 34 of this subpart. Compound-specific fraction measured factors are compound specific and shall be used only when concentration of individual compounds are determined or when only one compound is in the wastewater stream. The flow weighted annual average concentration of each Table 8 compound means the mass of each Table 8 compound occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. The annual average concentration shall be determined for each wastewater stream either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. Procedures specified in paragraphs (b)(3), (b)(4), and (b)(5) of this section are considered acceptable procedures for determining the annual average concentration. They may be used in combination, and no one procedure shall take precedence over another.

(3) *Knowledge of the wastewater.* Where knowledge is used to determine the annual average concentration, the owner or operator shall provide sufficient information to document the annual average concentration for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average concentration is not required for Group 1 streams. Examples of acceptable documentation include material balances, records of chemical purchases, process stoichiometry, or previous test results. If test data are used, the owner or operator shall provide documentation describing the testing protocol and the means by which any losses of volatile compounds during sampling, and the bias and accuracy of the analytical method, were accounted for in the determination.

(4) *Bench-scale or pilot-scale test data.* Where bench-scale or pilot-scale test data are used to determine the annual average concentration, the owner or operator shall provide sufficient information to document that the data are representative of the actual annual average concentration, or are reliably indicative of another relevant characteristic of the wastewater stream that could be used to predict the annual average concentration. For concentration data, the owner or operator shall also provide documentation describing the testing protocol, and the means by which any losses of volatile compounds during sampling, and the bias and accuracy of the analytical method, were accounted for in the determination of annual average concentration.

(5) *Test data from sampling at the point of determination or at a location downstream of the point of determination.* Where an owner or operator elects to comply with paragraph (a)(1) of this section by measuring the concentration for the relevant Table 8 or Table 9 compounds, the owner or operator shall comply with the requirements of this paragraph. For each wastewater stream, measurements shall be made either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. A minimum of

three samples from each wastewater stream shall be taken. Samples may be grab samples or composite samples.

(i) *Methods.* The owner or operator shall use any of the methods specified in paragraphs (b)(5)(i)(A) through (b)(5)(i)(F) of this section.

(A) *Method 25D.* Use procedures specified in Method 25D of 40 CFR part 60, appendix A.

(B) *Method 305.* Use procedures specified in Method 305 of 40 CFR part 63, appendix A.

(C) *Methods 624 and 625.* Use procedures specified in Methods 624 and 625 of 40 CFR part 136, appendix A and comply with the sampling protocol requirements specified in paragraph (b)(5)(ii) of this section. If these methods are used to analyze one or more compounds that are not on the method's published list of approved compounds, the Alternative Test Procedure specified in 40 CFR 136.4 and 136.5 shall be followed. For Method 625, make corrections to the compounds for which the analysis is being conducted based on the accuracy as recovery factors in Table 7 of the method.

(D) *Method 1624 and Method 1625.* Use procedures specified in Method 1624 and Method 1625 of 40 CFR part 136, appendix A and comply with the requirements specified in paragraph (b)(5)(ii) of this section. If these methods are used to analyze one or more compounds that are not on the method's published list of approved compounds, the Alternative Test Procedure specified in 40 CFR 136.4 and 136.5 shall be followed.

(E) *Other EPA method(s).* Use procedures specified in the method and comply with the requirements specified in paragraphs (b)(5)(ii) and either paragraph (b)(5)(iii)(A) or (b)(5)(iii)(B) of this section.

(F) *Method(s) other than EPA method.* Use procedures specified in the method and comply with the requirements specified in paragraphs (b)(5)(ii) and (b)(5)(iii)(A) of this section.

(ii) *Sampling plan.* The owner or operator who is expressly referred to this paragraph by provisions of this subpart shall prepare a sampling plan. Wastewater samples shall be collected using sampling procedures which minimize

loss of organic compounds during sample collection and analysis and maintain sample integrity. The sample plan shall include procedures for determining recovery efficiency of the relevant hazardous air pollutants listed in table 8 or table 9 of this subpart. An example of an acceptable sampling plan would be one that incorporates similar sampling and sample handling requirements to those of Method 25D of 40 CFR part 60, appendix A. The sampling plan shall be maintained at the facility.

(iii) *Validation of methods.* The owner or operator shall validate EPA methods other than Methods 25D, 305, 624, 625, 1624, and 1625 using the procedures specified in paragraph (b)(5)(iii)(A) or (b)(5)(iii)(B) of this section. The owner or operator shall validate other methods as specified in paragraph (b)(5)(iii)(A) of this section.

(A) *Validation of EPA methods and other methods.* The method used to measure organic hazardous air pollutants concentrations in the wastewater shall be validated according to section 5.1 or 5.3, and the corresponding calculations in section 6.1 or 6.3, of Method 301 of appendix A of this part. The data are acceptable if they meet the criteria specified in section 6.1.5 or 6.3.3 of Method 301 of appendix A of this part. If correction is required under section 6.3.3 of Method 301 of appendix A of this part, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 of appendix A of this part are not required. The concentrations of the individual organic hazardous air pollutants measured in the water may be corrected to their concentrations had they been measured by Method 305 of appendix A of this part, by multiplying each concentration by the compound-specific fraction measured (Fm) factor listed in table 34 of this subpart.

(B) *Validation for EPA methods.* Follow the procedures as specified in "Alternative Validation Procedure for EPA Waste Methods" 40 CFR part 63, appendix D.

(iv) *Calculations of average concentration.* The average concentration for each individually speciated Table 8 compound shall be calculated by adding the individual values determined

for the specific compound in each sample and dividing by the number of samples. The total average concentration of Table 9 compounds shall be calculated by first summing the concentration of the individual compounds to obtain a total hazardous air pollutants concentration for the sample; add the sample totals and then divide by the number of samples in the run to obtain the sample average for the run. If the method used does not speciate the compounds, the sample results should be added and this total divided by the number of samples in the run to obtain the sample average for the run.

(6) *Adjustment for concentrations determined downstream of the point of determination.* The owner or operator shall make corrections to the annual average concentration or total annual average concentration when the concentration is determined downstream of the point of determination at a location where: two or more wastewater streams have been mixed; one or more wastewater streams have been treated; or, losses to the atmosphere have occurred. The owner or operator shall make the adjustments either to the individual data points or to the final annual average concentration.

(c) *Procedures to determine flow rate, when evaluating Group status under paragraph (a)(1) of this section.* An owner or operator who elects to comply with paragraph (a)(1) of this section shall determine the annual average flow rate of the wastewater stream either at the point of determination for each wastewater stream, or downstream of the point of determination with adjustment for flow rate changes made according to paragraph (c)(4) of this section. These procedures may be used in combination for different wastewater streams at the source. The annual average flow rate for the wastewater stream shall be representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12-month period. The owner or operator shall consider the total annual wastewater volume generated by the chemical manufacturing process unit. If the chemical manufacturing process unit is a flexible operation

unit, the owner or operator shall consider all anticipated production in the process equipment over the designated 12-month period. The procedures specified in paragraphs (c)(1), (c)(2), and (c)(3) of this section are considered acceptable procedures for determining the flow rate. They may be used in combination, and no one procedure shall take precedence over another.

(1) *Knowledge of the wastewater.* The owner or operator may use knowledge of the wastewater stream and/or the process to determine the annual average flow rate. The owner or operator shall use the maximum expected annual average production capacity of the process unit, knowledge of the process, and/or mass balance information to either: Estimate directly the annual average wastewater flow rate; or estimate the total annual wastewater volume and then divide total volume by 525,600 minutes in a year. Where knowledge is used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(2) *Historical Records.* The owner or operator may use historical records to determine the annual average flow rate. Derive the highest annual average flow rate of wastewater from historical records representing the most recent 5 years of operation or, if the process unit has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the process unit. Where historical records are used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(3) *Measurements of flow rate.* Where an owner or operator elects to comply with paragraph (a)(1) of this section by measuring the flow rate, the owner or operator shall comply with the requirements of this paragraph. Measurements

shall be made at the point of determination, or at a location downstream of the point of determination with adjustments for flow rate changes made according to paragraph (c)(4) of this section. Where measurement data are used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(4) *Adjustment for flow rates determined downstream of the point of determination.* The owner or operator shall make corrections to the annual average flow rate of a wastewater stream when it is determined downstream of the point of determination at a location where two or more wastewater streams have been mixed or one or more wastewater streams have been treated. The owner or operator shall make corrections for such changes in the annual average flow rate.

[62 FR 2762, Jan. 17, 1997]

§ 63.145 Process wastewater provisions—test methods and procedures to determine compliance.

(a) *General.* This section specifies the procedures for performance tests that are conducted to demonstrate compliance of a treatment process or a control device with the control requirements specified in § 63.138 of this subpart. Owners or operators conducting a design evaluation shall comply with the requirements of paragraph (a)(1) or (a)(2) of this section. Owners or operators conducting a performance test shall comply with the applicable requirements in paragraphs (a) through (i) of this section.

(1) *Performance tests and design evaluations for treatment processes.* If design steam stripper option (§ 63.138(d)) or RCRA option (§ 63.138(h)) is selected to comply with § 63.138, neither a design evaluation nor a performance test is required. For any other non-biological treatment process, the owner or operator shall conduct either a design evaluation as specified in § 63.138(j), or a performance test as specified in this section. For closed biological treatment processes, the owner or operator

shall conduct either a design evaluation as specified in §63.138(j), or a performance test as specified in this section. For each open biological treatment process, the owner or operator shall conduct a performance test as specified in this section.

NOTE: Some open biological treatment processes may not require a performance test. Refer to §63.145(h) and table 36 of this subpart to determine whether the biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

(2) *Performance tests and design evaluations for control devices.* The owner or operator shall conduct either a design evaluation as specified in §63.139(d), or a performance test as specified in paragraph (i) of this section for control devices other than flares and paragraph (j) of this section for flares.

(3) *Representative process unit operating conditions.* Compliance shall be demonstrated for representative operating conditions. Operations during periods of startup, shutdown, or malfunction and periods of nonoperation shall not constitute representative conditions. The owner or operator shall record the process information that is necessary to document operating conditions during the test.

(4) *Representative treatment process or control device operating conditions.* Performance tests shall be conducted when the treatment process or control device is operating at a representative inlet flow rate and concentration. If the treatment process or control device will be operating at several different sets of representative operating conditions, the owner or operator shall comply with paragraphs (a)(4)(i) and (a)(4)(ii) of this section. The owner or operator shall record information that is necessary to document treatment process or control device operating conditions during the test.

(i) *Range of operating conditions.* If the treatment process or control device will be operated at several different sets of representative operating conditions, performance testing over the entire range is not required. In such cases, the performance test results shall be supplemented with modeling and/or engineering assessments to dem-

onstrate performance over the operating range.

(ii) *Consideration of residence time.* If concentration and/or flow rate to the treatment process or control device are not relatively constant (i.e., comparison of inlet and outlet data will not be representative of performance), the owner or operator shall consider residence time, when determining concentration and flow rate.

(5) *Testing equipment.* All testing equipment shall be prepared and installed as specified in the applicable test methods, or as approved by the Administrator.

(6) *Compounds not required to be considered in performance tests or design evaluations.* Compounds that meet the requirements specified in paragraph (a)(6)(i), (a)(6)(ii), or (a)(6)(iii) of this section are not required to be included in the performance test. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in table 34 of this subpart.

(i) Compounds not used or produced by the chemical manufacturing process unit; or

(ii) Compounds with concentrations at the point of determination that are below 1 part per million by weight; or

(iii) Compounds with concentrations at the point of determination that are below the lower detection limit where the lower detection limit is greater than 1 part per million by weight. The method shall be an analytical method for wastewater which has that compound as a target analyte.

(7) *Treatment using a series of treatment processes.* In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process to comply with emissions limitations, the owner or operator may use multiple treatment processes. The owner or operator complying with the requirements of §63.138(a)(7)(i), when wastewater is conveyed by hard-piping, shall comply with either §63.145(a)(7)(i) or §63.145(a)(7)(ii) of this subpart. The owner or operator complying with the

requirements of § 63.138(a)(7)(ii) of this subpart shall comply with the requirements of § 63.145(a)(7)(ii) of this subpart.

(i) The owner or operator shall conduct the performance test across each series of treatment processes. For each series of treatment processes, inlet concentration and flow rate shall be measured either where the wastewater stream enters the first treatment process in a series of treatment processes, or prior to the first treatment process as specified in § 63.145(a)(9) of this subpart. For each series of treatment processes, outlet concentration and flow rate shall be measured where the wastewater stream exits the last treatment process in the series of treatment processes, except when the last treatment process is an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in § 63.145 (f) or (g) of this subpart. When the last treatment process is either an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in § 63.145 (f) or (g) of this subpart, inlet and outlet concentrations and flow rates shall be measured as provided in paragraphs (a)(7)(i)(A) and (a)(7)(i)(B) of this section. The mass flow rates removed or destroyed by the series of treatment processes and by the biological treatment process are all used to calculate actual mass removal (AMR) as specified in § 63.145(f)(5)(ii) of this subpart.

(A) The inlet and outlet to the series of treatment processes prior to the biological treatment process are the points at which the wastewater enters the first treatment process and exits the last treatment process in the series, respectively, except as provided in paragraph (a)(9)(ii) of this section.

(B) The inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process or the outlet from the series of treatment processes identified in paragraph (a)(7)(i)(A) of this section, except as provided in paragraph (a)(9)(ii) of this section.

(ii) The owner or operator shall conduct the performance test across each treatment process in the series of treatment processes. The mass flow rate removed or destroyed by each

treatment process shall be added together to determine whether compliance has been demonstrated using § 63.145 (c), (d), (e), (f), and (g), as applicable. If a biological treatment process is one of the treatment processes in the series of treatment processes, the inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process, or the inlet to the equalization tank if all the criteria of paragraph (a)(9)(ii) of this section are met.

(8) When using a biological treatment process to comply with § 63.138 of this subpart, the owner or operator may elect to calculate the AMR using a subset of Table 8 and/or Table 9 compounds determined at the point of determination or downstream of the point of determination with adjustment for concentration and flowrate changes made according to § 63.144(b)(6) and § 63.144(c)(4) of this subpart, respectively. All Table 8 and/or Table 9 compounds measured to determine the RMR, except as provided by § 63.145(a)(6), shall be included in the RMR calculation.

(9) The owner or operator determining the inlet for purposes of demonstrating compliance with § 63.145 (e), (f), or (g) of this subpart may elect to comply with paragraph (a)(9)(i) or (a)(9)(ii) of this section.

(i) When wastewater is conveyed exclusively by hard-piping from the point of determination to a treatment process that is either the only treatment process or the first in a series of treatment processes (i.e., no treatment processes or other waste management units are used upstream of this treatment process to store, handle, or convey the wastewater), the inlet to the treatment process shall be at any location from the point of determination to where the wastewater stream enters the treatment process. When samples are taken upstream of the treatment process and before wastewater streams have converged, the owner or operator shall ensure that the mass flow rate of all Group 1 wastewater streams is accounted for when using § 63.138 (e) or (f) to comply and that the mass flow rate of all Group 1 and Group 2 wastewater streams is accounted for when using

§ 63.138(g) to comply, except as provided in § 63.145(a)(6).

(ii) The owner or operator may consider the inlet to the equalization tank as the inlet to the biological treatment process if all the criteria in paragraphs (a)(9)(ii)(A) through (a)(9)(ii)(C) of this section are met. The outlet from the series of treatment processes prior to the biological treatment process is the point at which the wastewater exits the last treatment process in the series prior to the equalization tank, if the equalization tank and biological treatment process are part of a series of treatment processes. The owner or operator shall ensure that the mass flow rate of all Group 1 wastewater streams is accounted for when using § 63.138 (e) or (f) to comply and that the mass flow rate of all Group 1 and Group 2 wastewater streams is accounted for when using § 63.138(g) to comply, except as provided in § 63.145(a)(6).

(A) The wastewater is conveyed by hard-piping from either the last previous treatment process or the point of determination to the equalization tank.

(B) The wastewater is conveyed from the equalization tank exclusively by hard-piping to the biological treatment process and no treatment processes or other waste management units are used to store, handle, or convey the wastewater between the equalization tank and the biological treatment process.

(C) The equalization tank is equipped with a fixed roof and a closed vent system that routes emissions to a control device that meets the requirements of § 63.133(a)(2)(i) and § 63.133 (b)(1) through (b)(4) of this subpart.

(b) *Noncombustion treatment process—concentration limits.* This paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion treatment process with the parts per million by weight wastewater stream concentration limits at the outlet of the treatment process. This compliance option is specified in § 63.138(b)(1) and § 63.138(c)(1). Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per

§ 63.144(b)(5)(ii). Samples shall be collected and analyzed using the procedures specified in § 63.144 (b)(5)(i), (b)(5)(ii), and (b)(5)(iii) of this subpart. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 may be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 34 of this subpart. Concentration measurements based on methods other than Method 305 may be adjusted by multiplying each concentration by the compound-specific Fm factor listed in table 34 of this subpart. (For wastewater streams that are Group 1 for both Table 8 and Table 9 compounds, compliance is demonstrated only if the sum of the concentrations of Table 9 compounds is less than 50 ppmw, and the concentration of each Table 8 compound is less than 10 ppmw.)

(c) *Noncombustion, nonbiological treatment process: Percent mass removal/destruction option.* This paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion, nonbiological treatment process with the percent mass removal limits specified in § 63.138(e) (1) and (2) for Table 8 and/or Table 9 compounds. The owner or operator shall comply with the requirements specified in § 63.145 (c)(1) through (c)(6) of this subpart.

(1) *Concentration.* The concentration of Table 8 and/or Table 9 compounds entering and exiting the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals

over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in Table 34 of this subpart.

(2) *Flow rate.* The flow rate of the entering and exiting wastewater streams

shall be determined using inlet and outlet flow meters, respectively. Where the outlet flow is not greater than the inlet flow, a flow meter shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) *Calculation of mass flow rate—for noncombustion, nonbiological treatment processes.* The mass flow rates of Table 8 and/or Table 9 compounds entering and exiting the treatment process are calculated as follows.

$$QMW_a = \frac{\rho}{p * 10^6} \left(\sum_{k=1}^p Q_{a,k} C_{T,a,k} \right) \quad (\text{Eqn WW1})$$

$$QMW_b = \frac{\rho}{p * 10^6} \left(\sum_{k=1}^p Q_{b,k} C_{T,b,k} \right) \quad (\text{Eqn WW2})$$

Where:

QMW_a , QMW_b =Mass flow rate of Table 8 or Table 9 compounds, average of all runs, in wastewater entering (QMW_a) or exiting (QMW_b) the treatment process, kilograms per hour.

ρ =Density of the wastewater, kilograms per cubic meter.

$Q_{a,k}$, $Q_{b,k}$ =Volumetric flow rate of wastewater entering ($Q_{a,k}$) or exiting ($Q_{b,k}$) the treatment process during each run k, cubic meters per hour.

$C_{T,a,k}$, $C_{T,b,k}$ =Total concentration of Table 8 or Table 9 compounds in wastewater entering ($C_{T,a,k}$) or exiting ($C_{T,b,k}$) the treatment process during each run k, parts per million by weight.

p =Number of runs.

k =Identifier for a run.

10^6 =conversion factor, mg/kg

(4) *Percent removal calculation for mass flow rate.* The percent mass removal across the treatment process shall be calculated as follows:

$$E = \frac{QMW_a - QMW_b}{QMW_a} \times 100 \quad (\text{Eqn WW3})$$

Where:

E =Removal or destruction efficiency of the treatment process, percent.

QMW_a , QMW_b =Mass flow rate of Table 8 or Table 9 compounds in wastewater entering (QMW_a) and exiting (QMW_b) the treatment process, kilograms per hour (as calculated using Equations WW1 and WW2).

(5) *Calculation of flow-weighted average of Fr values.* If complying with §63.138(e)(2), use Equation WW8 to calculate the flow-weighted average of the Fr values listed in Table 9 of this subpart. When the term “combustion” is used in Equation WW8, the term “treatment process” shall be used for the purposes of this paragraph.

(6) *Compare mass removal efficiency to required efficiency.* Compare the mass removal efficiency (calculated in Equation WW3) to the required efficiency as specified in § 63.138(e) of this subpart. If complying with § 63.138(e)(1), compliance is demonstrated if the mass removal efficiency is 99 percent or greater. If complying with § 63.138(e)(2), compliance is demonstrated if the mass removal efficiency is greater than or equal to the flow-weighted average of the Fr values calculated in Equation WW8.

(d) *Combustion treatment processes: percent mass removal/destruction option.* This paragraph applies to performance tests that are conducted to demonstrate compliance of a combustion treatment process with the percent mass destruction limits specified in § 63.138(e) (1) and (2) for Table 9 compounds, and/or § 63.138(e)(1) for Table 8 compounds. The owner or operator shall comply with the requirements specified in § 63.145 (d)(1) through (d)(9) of this subpart. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) *Concentration in wastewater stream entering the combustion treatment process.* The concentration of Table 8 and/or Table 9 compounds entering the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sam-

pling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 of appendix A of this part shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) *Flow rate of wastewater entering the combustion treatment process.* The flow rate of the wastewater stream entering the combustion treatment process shall be determined using an inlet flow meter. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) *Calculation of mass flow rate in wastewater stream entering combustion treatment processes.* The mass flow rate of Table 8 and/or Table 9 compounds entering the treatment process is calculated as follows:

$$QMW_a = \frac{\rho}{p * 10^6} \left(\sum_{k=1}^p Q_{a,k} * C_{T,a,k} \right) \quad (\text{Eqn WW4})$$

Where:

QMW_a=Mass flow rate of Table 8 or Table 9 compounds entering the combustion unit, kilograms per hour.

ρ=Density of the wastewater stream, kilograms per cubic meter.

Q_{a,k}=Volumetric flow rate of wastewater entering the combustion unit during run k, cubic meters per hour.

C_{T,a,k}=Total concentration of Table 8 or Table 9 compounds in the waste-

water stream entering the combustion unit during run k, parts per million by weight.

p=Number of runs.

k=Identifier for a run.

(4) *Concentration in vented gas stream exiting the combustion treatment process.* The concentration of Table 8 and/or Table 9 compounds exiting the combustion treatment process in any vented gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples.

Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(5) *Volumetric flow rate of vented gas stream exiting the combustion treatment process.* The volumetric flow rate of the

vented gas stream exiting the combustion treatment process shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(6) *Calculation of mass flow rate of vented gas stream exiting combustion treatment processes.* The mass flow rate of Table 8 and/or Table 9 compounds in a vented gas stream exiting the combustion treatment process shall be calculated as follows:

$$QMG_a = K_2 \left(\sum_{i=1}^n CG_{a,i} MW_i \right) QG_a \quad (\text{Eqn WW5})$$

$$QMG_b = K_2 \left(\sum_{i=1}^n CG_{b,i} MW_i \right) QG_b \quad (\text{Eqn WW6})$$

Where:

$CG_{a,i}$, $CG_{b,i}$ =Concentration of total organic compounds (TOC) (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering ($CG_{a,i}$) and exiting ($CG_{b,i}$) the control device, dry basis, parts per million by volume.

QMG_a , QMG_b =Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (QMG_a) and exiting (QMG_b) the control device, dry basis, kilograms per hour.

MW_i =Molecular weight of a component, kilogram/kilogram-mole.

QG_a , QG_b =Flow rate of gas stream entering (QG_a) and exiting (QG_b) the control device, dry standard cubic meters per hour.

K_2 =Constant, 41.57×10^{-9} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20° Celsius.

i =Identifier for a compound.

n =Number of components in the sample.

(7) *Destruction efficiency calculation.* The destruction efficiency of the combustion unit for Table 8 and/or Table 9 compounds shall be calculated as follows:

$$E = \frac{QMW_a - QMG_b}{QMW_a} * 100 \quad (\text{Eqn WW7})$$

Where:

E =Destruction efficiency of Table 8 or Table 9 compounds for the combustion unit, percent.

QMW_a =Mass flow rate of Table 8 or Table 9 compounds entering the combustion unit, kilograms per hour.

QMG_b =Mass flow rate of Table 8 or Table 9 compounds in vented gas

stream exiting the combustion treatment process, kilograms per hour.

(8) *Calculation of flow-weighted average of Fr values.* Use Equation WW8 to calculate the flow-weighted average of the Fr values listed in table 9 of this subpart.

$$Fr_{avg} = \left[\frac{\sum_{i=1}^n \sum_{k=1}^p Fr_i * C_{i,a,k} * Q_{a,k}}{\sum_{k=1}^p \sum_{i=1}^n C_{i,a,k} * Q_{a,k}} \right] * 100 \quad (\text{Eqn WW8})$$

Where:

Fr_{avg} =Flow-weighted average of the Fr values.

$C_{i,a,k}$ =Concentration of Table 8 and/or Table 9 compounds in wastewater stream entering the combustion unit, during run k, parts per million by weight.

$Q_{a,k}$ =Volumetric flow rate of wastewater entering the combustion unit during run k, cubic meters per hour.

Fr_i =Compound-specific Fr value listed in table 9 of this subpart.

(9) *Calculate flow-weighted average of Fr values and compare to mass destruction efficiency.* Compare the mass destruction efficiency (calculated in Equation WW 7) to the required efficiency as specified in § 63.138(e). If complying with § 63.138(e)(1), compliance is demonstrated if the mass destruction efficiency is 99 percent or greater. If complying with § 63.138(e)(2), compliance is demonstrated if the mass destruction efficiency is greater than or equal to the flow-weighted average of the Fr value calculated in Equation WW8.

(e) *Non-combustion treatment processes including closed biological treatment processes: RMR option.* This paragraph applies to performance tests for non-combustion treatment processes other than open biological treatment processes to demonstrate compliance with the mass removal provisions for Table 8 and/or Table 9 compounds. Compliance options for noncombustion treatment processes are specified in § 63.138(f) of this subpart. Compliance options for closed aerobic or anaerobic biological

treatment processes are specified in § 63.138(f) and § 63.138(g) of this subpart. When complying with § 63.138(f), the owner or operator shall comply with the requirements specified in § 63.145(e)(1) through (e)(6) of this subpart. When complying with § 63.138(g), the owner or operator shall comply with the requirements specified in § 63.145(e)(1) through (e)(6) of this subpart. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) *Concentration in wastewater stream.* The concentration of Table 8 and/or Table 9 compounds shall be determined as provided in this paragraph. Concentration measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for concentration change made according to § 63.144(b)(6) of this subpart. Concentration measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run,

and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) *Flow rate.* Flow rate measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for flow rate change made according to §63.144(c)(4) of this subpart. Flow rate measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in §63.145(a)(7) for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow

measurement devices. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) *Calculation of RMR for non-combustion treatment processes including closed biological treatment processes.* When using §63.138(f) to comply, the required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated as specified in paragraph (e)(3)(i) of this section. When using §63.138(g) to comply, the required mass removal shall be calculated as specified in paragraph (e)(3)(ii) of this section.

(i) When using §63.138(f) to comply, the required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated using Equation WW9.

$$\text{RMR} = \frac{\rho}{10^9} Q \sum_{i=1}^n (C_i * \text{Fr}_i) \quad (\text{Eqn WW9})$$

Where:

RMR=Required mass removal for treatment process or series of treatment processes, kilograms per hour.

ρ =Density of the Group 1 wastewater stream, kilograms per cubic meter.

Q=Volumetric flow rate of wastewater stream at the point of determination, liters per hour.

i=Identifier for a compound.

n=Number of Table 8 or Table 9 compounds in stream.

C_i =Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

Fr_i =Fraction removal value of a Table 8 or Table 9 compound. Fr values are listed in table 9 of this subpart.

10^9 =Conversion factor, mg/kg * l/m³.

(ii) When using §63.138(g) to comply, the required mass removal is 95 percent of the mass flow rate for all Group 1 and Group 2 wastewater streams combined for treatment. The required mass removal of Table 8 and/or Table 9 compounds for all Group 1 and Group 2 wastewater streams combined for treatment when complying with §63.138(g) shall be calculated using the following equation:

$$\text{RMR} = \frac{0.95\rho}{10^9} Q \sum_{i=1}^n (C_i) \quad (\text{Eqn WW9a})$$

Where:

RMR=Required mass removal for treatment process or series of treatment processes, kilograms per hour.

ρ =Density of the Group 1 wastewater stream, kilograms per cubic meter.
 Q =Volumetric flow rate of wastewater stream at the point of determination, liters per hour.

i =Identifier for a compound.

n =Number of Table 8 or Table 9 compounds in stream.

C_i =Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

10^9 =Conversion factor, $\text{mg/kg} \cdot \text{l/m}^3$

(4)(i) The required mass removal is calculated by summing the required

mass removal for each Group 1 wastewater stream to be combined for treatment when complying with § 63.138(f).

(ii) The required mass removal is calculated by summing the required mass removal for all Group 1 and Group 2 wastewater streams combined for treatment when complying with § 63.138(g).

(5) *The AMR calculation procedure for non-combustion treatment processes including closed biological treatment processes.* The AMR shall be calculated as follows:

$$\text{AMR} = (\text{QMW}_a - \text{QMW}_b) \quad (\text{Eqn WW10})$$

Where:

AMR=Actual mass removal of Table 8 or Table 9 compounds achieved by treatment process or series of treatment processes, kilograms per hour.

QMW_a =Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the treatment process or first treatment process in a series of treatment processes, kilograms per hour.

QMW_b =Mass flow rate of Table 8 or Table 9 compounds in wastewater exiting the last treatment process in a series of treatment processes, kilograms per hour.

(6) *Compare RMR to AMR.* When complying with § 63.138(f), compare the RMR calculated in Equation WW9 to the AMR calculated in Equation WW10. Compliance is demonstrated if the AMR is greater than or equal to the RMR. When complying with § 63.138(g), compare the RMR calculated in Equation WW-9a to the AMR calculated in Equation WW10. Compliance is demonstrated if the AMR is greater than or equal to 95-percent mass removal.

(f) *Open or closed aerobic biological treatment processes: Required mass removal (RMR) option.* This paragraph applies to the use of performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the mass removal provisions for Table 8

and/or Table 9 compounds. These compliance options are specified in § 63.138(f) of this subpart. The owner or operator shall comply with the requirements specified in § 63.145 (f)(1) through (f)(6) of this subpart. Some compounds may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine which compounds may be exempt from the requirements of this paragraph.

(1) *Concentration in wastewater stream.* The concentration of Table 8 and/or Table 9 compounds shall be determined as provided in this paragraph. Concentration measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for concentration change made according to § 63.144(b)(6) of this subpart. Concentration measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period.

Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) *Flow rate.* Flow rate measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for flow rate change made according to § 63.144(c)(4) of this subpart. Flow rate measurements to determine AMR shall be

taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow measurement devices. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) *Calculation of RMR for open or closed aerobic biological treatment processes.* The required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated using the following equation:

$$\text{RMR} = \frac{\rho}{10^9} Q \sum_{i=1}^n (C_i * Fr_i) \quad (\text{Eqn WW11})$$

Where:

RMR=Required mass removal for treatment process or series of treatment processes, kilograms per hour.

ρ =Density of the Group 1 wastewater stream, kilograms per cubic meter.

Q=Volumetric flow rate of wastewater stream at the point of determination, liters per hour.

i=Identifier for a compound.

n=Number of Table 8 or Table 9 compounds in stream.

C_i =Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

Fr_i =Fraction removal value of a Table 8 or Table 9 compound. Fr values are listed in table 9 of this subpart.

10^9 =Conversion factor, mg/kg * l/m³.

(4) The required mass removal is calculated by adding together the required mass removal for each Group 1 wastewater stream to be combined for treatment.

(5) *Actual mass removal calculation procedure for open or closed aerobic biological treatment processes.* The actual mass removal (AMR) shall be calculated using Equation WW12 as specified in paragraph (f)(5)(i) of this section when

the performance test is performed across the open or closed aerobic biological treatment process only. If compliance is being demonstrated in accordance with § 63.145(a)(7)(i), the AMR for the series shall be calculated using Equation WW13 in § 63.145(f)(5)(ii). (This equation is for situations where treatment is performed in a series of treatment processes connected by hard-piping.) If compliance is being demonstrated in accordance with § 63.145(a)(7)(ii), the AMR for the biological treatment process shall be calculated using Equation WW12 in § 63.145(f)(5)(i). The AMR for the biological treatment process used in a series of treatment processes calculated using Equation WW12 shall be added to the AMR determined for each of the other individual treatment processes in the series of treatment processes.

(i) Calculate AMR for the open or closed aerobic biological treatment process as follows:

$$\text{AMR} = \text{QMW}_a * F_{\text{bio}} \quad (\text{Eqn WW12})$$

Where:

AMR=Actual mass removal of Table 8 or Table 9 compounds achieved by

open or closed biological treatment process, kilograms per hour.

QMW_a=Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the treatment process, kilograms per hour.

F_{bio}=Site-specific fraction of Table 8 or Table 9 compounds biodegraded.

F_{bio} shall be determined as specified in § 63.145(h) and appendix C of this subpart.

(ii) Calculate AMR across a series of treatment units where the last treatment unit is an open or closed aerobic biological treatment process as follows:

$$AMR = QMW_a - (QMW_b)(1 - F_{bio}) \quad (\text{Eqn WW13})$$

Where:

AMR=Actual mass removal of Table 8 or Table 9 compounds achieved by a series of treatment processes, kilograms per hour.

QMW_a=Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the first treatment process in a series of treatment processes, kilograms per hour.

QMW_b=Mass flow rate of Table 8 or Table 9 compounds in wastewater exiting the last treatment process in a series of treatment processes prior to the biological treatment process, kilograms per hour.

F_{bio}=Site-specific fraction of Table 8 or Table 9 compounds biodegraded. F_{bio} shall be determined as specified in § 63.145(h) and appendix C of this subpart.

(6) *Compare RMR to AMR.* Compare the RMR calculated in Equation WW11 to the AMR calculated in either Equation WW12 or WW13, as applicable. Compliance is demonstrated if the AMR is greater than or equal to the RMR.

(g) *Open or closed aerobic biological treatment processes: 95-percent mass removal option.* This paragraph applies to performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the 95-percent mass removal provisions for Table 8 and/or Table 9 compounds. This compliance option is specified in § 63.138(g) of this subpart. The RMR for this option is 95-percent mass removal. The owner or operator shall comply with the requirements specified in § 63.145(g)(1) to determine AMR, § 63.145 (e)(3)(ii) and (e)(4)(ii) to determine RMR, and (g)(2)

of this subpart to determine whether compliance has been demonstrated. Some compounds may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine which compounds may be exempt from the requirements of this paragraph. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) The owner or operator shall comply with the requirements specified in paragraphs (f)(1), (f)(2), and (f)(5) of this section to determine AMR. References to Group 1 wastewater streams shall be deemed Group 1 and Group 2 wastewater streams for the purposes of this paragraph.

(2) *Compare RMR to AMR.* Compliance is demonstrated if the AMR is greater than or equal to RMR.

(h) *Site-specific fraction biodegraded (F_{bio}).* The compounds listed in table 9 of this subpart are divided into three sets for the purpose of determining whether F_{bio} must be determined, and if F_{bio} must be determined, which procedures may be used to determine compound-specific kinetic parameters. These sets are designated as lists 1, 2, and 3 in table 36 of this subpart.

(1) *Performance test exemption.* If a biological treatment process meets the requirements specified in paragraphs (h)(1)(i) and (h)(1)(ii) of this section, the owner or operator is not required to determine F_{bio} and is exempt from the applicable performance test requirements specified in § 63.138 of this subpart.

(i) The biological treatment process meets the definition of “enhanced biological treatment process” in § 63.111 of this subpart.

(ii) At least 99 percent by weight of all compounds on table 36 of this subpart that are present in the aggregate of all wastewater streams using the biological treatment process to comply with § 63.138 of this subpart are compounds on list 1 of table 36 of this subpart.

(2) *F_{bio} determination.* For wastewater streams that include one or more compounds on lists 2 and/or 3 of table 36 of this subpart that do not meet criteria in paragraph (h)(1)(ii) of this section, the owner or operator shall determine *F_{bio}* for the biological treatment process using the procedures in appendix C to part 63, and paragraph (h)(2)(i) or (h)(2)(ii) of this section. For biological treatment processes that do not meet the definition for enhanced biological treatment in § 63.111 of this subpart, the owner or operator shall determine the *F_{bio}* for the biological treatment process using any of the procedures in appendix C to part 63, except the batch tests procedure.

(i) *Wastewater streams without list 3 compounds that are treated in enhanced biological treatment processes.* For wastewater streams that include no compounds on list 3 of table 36 of this subpart and the biological treatment process meets the definition of enhanced biological treatment process in § 63.111 of this subpart, the owner or operator shall determine *f_{bio}* for the list 2 compounds using any of the procedures specified in appendix C of 40 CFR part 63. (The symbol “*f_{bio}*” represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.) The owner or operator shall calculate *f_{bio}* for the list 1 compounds using the defaults for first order biodegradation rate constants (*K₁*) in table 37 of subpart G and follow the procedure explained in Form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C, 40 CFR part 63.

(ii) *Wastewater streams with list 3 compounds that are treated in enhanced biological treatment processes.* For wastewater streams that include one or more compounds on list 3 of table 36 of this

subpart, the owner or operator shall determine *f_{bio}* for the list 3 compounds using any of the procedures specified in appendix C, 40 CFR part 63, except the batch tests procedure. The owner or operator shall determine *f_{bio}* for the list 2 compounds using any of the procedures specified in appendix C, 40 CFR part 63. The owner or operator shall calculate *f_{bio}* for the list 1 compounds using the defaults for first order biodegradation rate constants (*K₁*) in table 37 of subpart G and follow the procedure explained in Form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C, of 40 CFR part 63.

(iii) *Performance tests for control devices other than flares.* This paragraph applies to performance tests that are conducted to demonstrate compliance of a control device with the efficiency limits specified in § 63.139(c). If complying with the 95-percent reduction efficiency requirement, comply with the requirements specified in paragraphs (i)(1) through (i)(9) of this section. If complying with the 20 ppm by volume requirement, comply with the requirements specified in paragraphs (i)(1) through (i)(6) and (i)(9) of this section. The 20 ppm by volume limit or 95 percent reduction efficiency requirement shall be measured as either total organic hazardous air pollutants or as TOC minus methane and ethane.

(i)(1) *Sampling sites.* Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate. For determination of compliance with the 95 percent reduction requirement, sampling sites shall be located at the inlet and the outlet of the control device. For determination of compliance with the 20 parts per million by volume limit, the sampling site shall be located at the outlet of the control device.

(2) *Concentration in gas stream entering or exiting the control device.* The concentration of total organic hazardous air pollutants or TOC in a gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples (i.e., integrated samples). Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run,

and the performance test shall consist of a minimum of 3 runs. Concentration measurements shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(3) *Volumetric flow rate of gas stream entering or exiting the control device.* The volumetric flow rate of the gas stream shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appen-

dix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(4) *Calculation of TOC concentration.* The TOC concentration (CG_T) is the sum of the concentrations of the individual components. If compliance is being determined based on TOC, the owner or operator shall compute TOC for each run using the following equation:

$$CG_T = \frac{1}{m} \sum_{j=1}^m \left(\sum_{i=1}^n CGS_{i,j} \right) \quad (\text{Eqn WW14})$$

Where:

CG_T =Total concentration of TOC (minus methane and ethane) in vented gas stream, average of samples, dry basis, parts per million by volume.

$CGS_{i,j}$ =Concentration of sample components in vented gas stream for sample j, dry basis, parts per million by volume.

i=Identifier for a compound.

n=Number of components in the sample.

j=Identifier for a sample.

m=Number of samples in the sample run.

(5) *Calculation of total organic hazardous air pollutants concentration.* The owner or operator determining compliance based on total organic hazardous air pollutants concentration (C_{HAP}) shall compute C_{HAP} according to the Equation WW14, except that only Table 9 compounds shall be summed.

(6) *Percent oxygen correction for combustion control devices.* If the control de-

vice is a combustion device, comply with the requirements specified in paragraph (i)(6)(i) of this section to determine oxygen concentration, and in paragraph (i)(6)(ii) of this section to calculate the percent oxygen correction.

(i) *Oxygen concentration.* The concentration of TOC or total organic hazardous air pollutants shall be corrected to 3 percent oxygen if the control device is a combustion device. The emission rate correction factor for excess air, composite sampling (i.e., integrated sampling) and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the actual oxygen concentration (% O_{2d}). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic hazardous air pollutants samples are taken.

(ii) *3 percent oxygen calculation.* The concentration corrected to 3 percent oxygen (CG_c), when required, shall be computed using the following equation:

$$CG_C = CG_T \left(\frac{17.9}{20.9 - \%O_{2d}} \right) \quad (\text{Eqn WW15})$$

Where:

CG_c =Concentration of TOC or organic hazardous air pollutants corrected

to 3 percent oxygen, dry basis, parts per million by volume.

CG_T=Total concentration of TOC (minus methane and ethane) in vented gas stream, average of samples, dry basis, parts per million by volume.

%O_{2d}=Concentration of oxygen measured in vented gas stream, dry basis, percent by volume.

(7) *Mass rate calculation.* The mass rate of either TOC (minus methane and ethane) or total organic hazardous air pollutants shall be calculated using the

following equations. Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by methods specified in paragraph (i)(2) of this section are summed using Equations WW16 and WW17. Where the mass rate of total organic hazardous air pollutants is being calculated, only Table 9 compounds shall be summed using Equations WW16 and WW17.

$$QMG_a = K_2 \left(\sum_{i=1}^n CG_{a,i} MW_i \right) QG_a \quad (\text{Eqn WW16})$$

$$QMG_b = K_2 \left(\sum_{i=1}^n CG_{b,i} MW_i \right) QG_b \quad (\text{Eqn WW17})$$

Where:

CG_{a,i}, CG_{b,i}=Concentration of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (CG_{a,i}) and exiting (CG_{b,i}) the control device, dry basis, parts per million by volume.

QMG_a, QMG_b=Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (QMG_a) and exiting (QMG_b) the control device, dry basis, kilograms per hour.

MW_i=Molecular weight of a component, kilogram/kilogram-mole.

QG_a, QG_b=Flow rate of gas stream entering (QG_a) and exiting (QG_b) the

control device, dry standard cubic meters per hour.

K₂=Constant, 41.57 x 10⁻⁹ (parts per million)⁻¹ (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20° Celsius.

i=Identifier for a compound.

n=Number of components in the sample.

(8) *Percent reduction calculation.* The percent reduction in TOC (minus methane and ethane) or total organic hazardous air pollutants shall be calculated as follows:

$$E = \frac{QMG_a - QMG_b}{QMG_a} (100\%) \quad (\text{Eqn WW18})$$

Where:

E=Destruction efficiency of control device, percent.

QMG_a, QMG_b=Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream entering and

exiting (QMG_b) the control device, dry basis, kilograms per hour.

(9) *Compare mass destruction efficiency to required efficiency.* If complying with the 95 percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation WW18) is 95 percent or greater. If complying with the

20 parts per million by volume limit in § 63.139 (c)(1)(ii) of this subpart, compliance is demonstrated if the outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration is 20 parts per million by volume, or less. For combustion control devices, the concentration shall be calculated on a dry basis, corrected to 3 percent oxygen.

(j) *Compliance demonstration for flares.* When a flare is used to comply with § 63.139 (c) of this subpart, the owner or operator shall comply with the flare provisions in § 63.11(b) of subpart A of this part.

(1) The compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

(2) An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic hazardous air pollutants or TOC concentration when a flare is used.

[62 FR 2765, Jan. 17, 1997]

§ 63.146 Process wastewater provisions—reporting.

(a) For each waste management unit, treatment process, or control device used to comply with §§ 63.138 (b)(1), (c)(1), (d), (e), (f), or (g) of this subpart for which the owner or operator seeks to monitor a parameter other than those specified in table 11, table 12, or table 13 of this subpart, the owner or operator shall submit a request for approval to monitor alternative parameters according to the procedures specified in § 63.151(f) or (g) of this subpart.

(b) The owner or operator shall submit the information specified in paragraphs (b)(1) through (b)(9) of this section as part of the Notification of Compliance Status required by § 63.152(b) of this subpart.

(1) [Reserved]

(2) For each new and existing source, the owner or operator shall submit the information specified in table 15 of this subpart for Table 8 and/or Table 9 compounds.

(3) [Reserved]

(4) For each treatment process identified in table 15 of this subpart that receives, manages, or treats a Group 1

wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 17 of this subpart.

(5) For each waste management unit identified in table 15 of this subpart that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 18 of this subpart.

(6) For each residual removed from a Group 1 wastewater stream, the owner or operator shall report the information specified in table 19 of this subpart.

(7) For each control device used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall report the information specified in paragraphs (b)(7)(i) and (b)(7)(ii) of this section.

(i) For each flare, the owner or operator shall submit the information specified in paragraphs (b)(7)(i)(A) through (b)(7)(i)(C) of this section.

(A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(B) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.139(c)(3) of this subpart; and

(C) Reports of the times and durations of all periods during the compliance determination when the pilot flame is absent or the monitor is not operating.

(ii) For each control device other than a flare, the owner or operator shall submit the information specified in paragraph (b)(7)(ii)(A) of this section and in either paragraph (b)(7)(ii)(B) or (b)(7)(ii)(C) of this section.

(A) The information on parameter ranges specified in § 63.152(b)(2) of this subpart for the applicable parameters specified in table 13 of this subpart, unless the parameter range has already been established in the operating permit; and either

(B) The design evaluation specified in § 63.139(d)(2) of this subpart; or

(C) Results of the performance test specified in § 63.139(d)(1) of this subpart. Performance test results shall include

operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with § 63.143 of this subpart; and applicable supporting calculations.

(8) For each treatment process used to comply with § 63.138 (b)(1)(iii)(C), (c)(1)(iii)(D), (d), or (e) of this subpart, the owner or operator shall submit the information specified in paragraphs (b)(8)(i) and (b)(8)(ii) of this section.

(i) For Items 1 and 2 in table 12 of this subpart, the owner or operator shall submit the information specified in paragraphs (b)(8)(i)(A) and (b)(8)(i)(B) of this section.

(A) The information on parameter ranges specified in § 63.152(b)(2) of this subpart for the parameters approved by the Administrator, unless the parameter range has already been established in the operating permit.

(B) Results of the initial measurements of the parameters approved by the Administrator and any applicable supporting calculations.

(ii) For Item 3 in table 12 of this subpart, the owner or operator shall submit the information on parameter ranges specified in § 63.152(b)(2) of this subpart for the parameters specified in Item 3 of table 12 of this subpart, unless the parameter range has already been established in the operating permit.

(9) Except as provided in paragraph (b)(9)(iii) of this section, for each waste management unit or treatment process used to comply with § 63.138(b)(1), (c)(1), (d), (e), (f), (g), or (h)(3) of this subpart, the owner or operator shall submit the information specified in either paragraph (b)(9)(i) or (b)(9)(ii) of this section.

(i) The design evaluation and supporting documentation specified in § 63.138(j)(1) of this subpart.

(ii) Results of the performance test specified in § 63.138(j)(2) of this subpart. Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with § 63.143 of this subpart; and applicable supporting calculations.

(iii) If the owner or operator elects to use one of the technologies specified in

§ 63.138(h) of this subpart, the owner or operator is exempt from the requirements specified in paragraphs (b)(9)(i) and (b)(9)(ii) of this section.

(c) For each waste management unit that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) of this subpart the results of each inspection required by § 63.143(a) of this subpart in which a control equipment failure was identified. Control equipment failure is defined for each waste management unit in §§ 63.133 through 63.137 of this subpart. Each Periodic Report shall include the date of the inspection, identification of each waste management unit in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

(d) Except as provided in paragraph (f) of this section, for each treatment process used to comply with § 63.138(b)(1), (c)(1), or (e) of this subpart, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) the information specified in paragraphs (d)(1), (d)(2), and (d)(3) of this section for the monitoring required by § 63.143(b) of this subpart.

(1) For Item 1 in table 12, the owner or operator shall submit the results of measurements that indicate that the biological treatment unit is outside the range established in the Notification of Compliance Status or operating permit.

(2) For Item 2 in table 12, the owner or operator shall submit the monitoring results for each operating day during which the daily average value of a continuously monitored parameter is outside the range established in the Notification of Compliance Status or operating permit.

(3) For Item 3 in table 12 of this subpart, the owner or operator shall submit the monitoring results for each operating day during which the daily average value of any monitored parameter approved in accordance with § 63.151 (f) was outside the range established in the Notification of Compliance Status or operating permit.

(e) Except as provided in paragraph (f) of this section, for each control device used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) of this subpart the information specified in either paragraph (e)(1) or (e)(2) of this section.

(1) The information specified in table 20 of this subpart, or

(2) If the owner or operator elects to comply with § 63.143(e)(2) of this subpart, i.e., an organic monitoring device installed at the outlet of the control device, the owner or operator shall submit the monitoring results for each operating day during which the daily average concentration level or reading is outside the range established in the Notification of Compliance Status or operating permit.

(f) Where the owner or operator obtains approval to use a treatment process or control device other than one for which monitoring requirements are specified in § 63.143 of this subpart, or to monitor parameters other than those specified in table 12 or 13 of this subpart, the Administrator will specify appropriate reporting requirements.

(g) If an extension is utilized in accordance with § 63.133(e)(2) or § 63.133(h) of this subpart, the owner or operator shall include in the next periodic report the information specified in § 63.133 (e)(2) or § 63.133(h).

[62 FR 2774, Jan. 17, 1997]

§ 63.147 Process wastewater provisions—recordkeeping.

(a) The owner or operator transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with § 63.132(g) of this subpart shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic hazardous air pollutants which are required to be managed and treated in accordance with the provisions of this subpart.

(b) The owner or operator shall keep in a readily accessible location the records specified in paragraphs (b)(1) through (b)(7) of this section.

(1) A record that each waste management unit inspection required by

§§ 63.133 through 63.137 of this subpart was performed.

(2) A record that each inspection for control devices required by § 63.139 of this subpart was performed.

(3) A record of the results of each seal gap measurement required by §§ 63.133(d) and 63.137(c) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 63.120(b)(2), (3), and (4) of this subpart.

(4) For Item 1 and Item 2 of table 12 of this subpart, the owner or operator shall keep the records approved by the Administrator.

(5) Except as provided in paragraphs (e) and (g) of this section, continuous records of the monitored parameters specified in Item 3 of table 12 and table 13 of this subpart, and in § 63.143(e)(2) of this subpart.

(6) Documentation of a decision to use an extension, as specified in § 63.133(e)(2) or (h) of this subpart, which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

(7) Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in § 63.140(c), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept on site and when the manufacturer promised delivery), and the date when repair was completed.

(c) For each boiler or process heater used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall keep a record of any changes in the location at which the vent stream is introduced into the flame zone as required in § 63.139(c)(1) of this subpart.

(d) The owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day as specified in § 63.152(f), except as provided in paragraphs (d)(1) and (d)(2) of this section.

(1) For flares, records of the times and duration of all periods during

which the pilot flame is absent shall be kept rather than daily averages.

(2) For carbon adsorbers, the owner or operator shall keep the records specified in paragraphs (d)(2)(i) and (d)(2)(ii) of this section instead of daily averages.

(i) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle.

(ii) Records of the temperature of the carbon bed after each regeneration cycle.

(e) Where the owner or operator obtains approval to use a control device other than one for which monitoring requirements are specified in § 63.143 of this subpart, or to monitor parameters other than those specified in table 12 or table 13 of this subpart, the Administrator will specify appropriate record-keeping requirements.

(f) If the owner or operator uses process knowledge to determine the annual average concentration of a wastewater stream as specified in § 63.144(b)(3) of this subpart and/or uses process knowledge to determine the annual average flow rate as specified in § 63.144(c)(1) of this subpart, and determines that the wastewater stream is not a Group 1 wastewater stream, the owner or operator shall keep in a readily accessible location the documentation of how process knowledge was used to determine the annual average concentration and/or the annual average flow rate of the wastewater stream.

[62 FR 2775, Jan. 17, 1997]

§ 63.148 Leak inspection provisions.

(a) Except as provided in paragraph (k) of this section, for each vapor collection system, closed-vent system, fixed roof, cover, or enclosure required to comply with this section, the owner or operator shall comply with the requirements of paragraphs (b) through (j) of this section.

(b) Except as provided in paragraphs (g) and (h) of this section, each vapor collection system and closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (b)(1) and (b)(2) of this section and each fixed roof, cover, and enclosure shall be inspected according to the procedures and schedule specified in paragraph (b)(3) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct annual inspections according to the procedures in paragraph (c) of this section.

(iii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(3) For each fixed roof, cover, and enclosure, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and

(ii) Conduct semi-annual visual inspections for visible, audible, or olfactory indications of leaks as specified in § 63.133 through § 63.137 of this subpart.

(c) Each vapor collection system, closed vent system, fixed roof, cover, and enclosure shall be inspected according to the procedures specified in paragraphs (c)(1) through (c)(5) of this section.

(1) Inspections shall be conducted in accordance with Method 21 of 40 CFR part 60, appendix A.

(2)(i) Except as provided in paragraph (c)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual volatile organic compound in the stream. For process streams that contain nitrogen, air, or other inerts which are not organic hazardous air pollutants or volatile organic compounds, the average stream response factor shall be calculated on an inert-free basis.

(ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (c)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (c)(2)(i) of this section.

(3) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(4) Calibration gases shall be as follows:

(i) Zero air (less than 10 parts per million hydrocarbon in air); and

(ii) Mixtures of methane in air at a concentration less than 10,000 parts per million. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (b)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(5) An owner or operator may elect to adjust or not adjust instrument readings for background. If an owner or operator elects to not adjust readings for background, all such instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall measure background concentration using the procedures in §§ 63.180(b) and (c) of subpart H of this part. The owner or operator shall subtract background reading from the maximum concentration indicated by the instrument.

(6) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining compliance.

(d) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (e) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (d)(3) of this section.

(3) For leaks found in vapor collection systems used for transfer operations, repairs shall be completed no later than 15 calendar days after the leak is detected or at the beginning of the next transfer loading operation, whichever is later.

(e) Delay of repair of a vapor collection system, closed vent system, fixed roof, cover, or enclosure for which leaks have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.101 of subpart F of this part, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next shutdown.

(f) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (f)(1) or (f)(2) of this section, except as provided in paragraph (f)(3) of this section.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3) of this subpart. The flow indicator shall be installed at the entrance to any bypass line; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(3) Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(g) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (b)(1), (b)(2), or (b)(3)(i) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(h) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(i) The owner or operator shall record the information specified in paragraphs (i)(1) through (i)(5) of this section.

(1) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the in-

formation specified in either paragraph (i)(3)(i) or (i)(3)(ii) of this section.

(i) Hourly records of whether the flow indicator specified under paragraph (f)(1) of this section was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(ii) Where a seal mechanism is used to comply with paragraph (f)(2) of this section, hourly records of flow are not required. In such cases, the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has broken.

(4) For each inspection during which a leak is detected, a record of the information specified in paragraphs (i)(4)(i) through (i)(4)(viii) of this section.

(i) The instrument identification numbers; operator name or initials; and identification of the equipment.

(ii) The date the leak was detected and the date of the first attempt to repair the leak.

(iii) Maximum instrument reading measured by the method specified in paragraph (d) of this section after the leak is successfully repaired or determined to be nonrepairable.

(iv) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(v) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.

(vi) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(vii) Dates of shutdowns that occur while the equipment is unrepaired.

(viii) The date of successful repair of the leak.

(5) For each inspection conducted in accordance with paragraph (c) of this

section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(6) For each visual inspection conducted in accordance with paragraph (b)(1)(ii) or (b)(3)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(j) The owner or operator shall submit with the reports required by § 63.182(b) of subpart H of this part or with the reports required by § 63.152(c) of this subpart, the information specified in paragraphs (j)(1) through (j)(3) of this section.

(1) The information specified in paragraph (i)(4) of this section;

(2) Reports of the times of all periods recorded under paragraph (i)(3)(i) of this section when the vent stream is diverted from the control device through a bypass line; and

(3) Reports of all periods recorded under paragraph (i)(3)(ii) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

(k) If a closed-vent system subject to this section is also subject to § 63.172 of subpart H of this part, the owner or operator shall comply with the provisions of § 63.172 of subpart H of this part and is exempt from the requirements of this section.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995; 62 FR 2775, Jan. 17, 1997]

§ 63.149 Control requirements for certain liquid streams in open systems within a chemical manufacturing process unit.

(a) The owner or operator shall comply with the provisions of table 35 of this subpart, for each item of equipment meeting all the criteria specified in paragraphs (b) through (d) and either paragraph (e)(1) or (e)(2) of this section.

(b) The item of equipment is of a type identified in table 35 of this subpart;

(c) The item of equipment is part of a chemical manufacturing process unit

that meets the criteria of § 63.100(b) of subpart F of this part;

(d) The item of equipment is controlled less stringently than in table 35 and is not listed in § 63.100(f) of subpart F of this part, and the item of equipment is not otherwise exempt from controls by the provisions of subparts A, F, G, or H of this part; and

(e) The item of equipment:

(1) is a drain, drain hub, manhole, lift station, trench, pipe, or oil/water separator that conveys water with a total annual average concentration greater than or equal to 10,000 parts per million by weight of Table 9 compounds at any flowrate; or a total annual average concentration greater than or equal to 1,000 parts per million by weight of Table 9 compounds at an annual average flow rate greater than or equal to 10 liters per minute. At a chemical manufacturing process unit subject to the new source requirements of 40 CFR 63.100(l)(1) or 40 CFR 63.100(l)(2), the criteria of this paragraph are also met if the item of equipment conveys water with an annual average concentration greater than or equal to 10 parts per million by weight of any Table 8 compound at an annual average flow rate greater than or equal to 0.02 liter per minute, or

(2) Is a tank that receives one or more streams that contain water with a total annual average concentration greater than or equal to 1,000 ppm (by weight) of Table 9 compounds at an annual average flowrate greater than or equal to 10 liters per minute. At a chemical manufacturing process unit subject to the new source requirements of 40 CFR 63.100(l)(1) or 40 CFR 63.100(l)(2), the criteria of this paragraph are also met if the tank receives one or more streams that contain water with an annual average concentration greater than or equal to 10 parts per million by weight of any Table 8 compound at an annual average flow rate greater than or equal to 0.02 liter per minute. The owner or operator of the source shall determine the characteristics of the stream as specified in paragraphs (e)(2) (i) and (ii) of this section.

(i) The characteristics of the stream being received shall be determined at the inlet to the tank.

(ii) The characteristics shall be determined according to the procedures in § 63.144 (b) and (c).

[62 FR 2776, Jan. 17, 1997]

§ 63.150 Emissions averaging provisions.

(a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in § 63.112(a) of this subpart by using emissions averaging according to § 63.112(f) of this subpart rather than following the provisions of §§ 63.113 through 63.148 of this subpart.

(b) Unless an operating permit application has been submitted, the owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in § 63.151(d) of this subpart for all points to be included in an emissions average. The Implementation Plan or operating permit application shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in § 63.111 of this subpart) is not applied and all other emission points being controlled as part of the average.

(c) The following emission points can be used to generate emissions averaging credits, if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point:

(1) Group 2 emission points.

(2) Group 1 emission points that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section.

(3) Emission points from which emissions are reduced by pollution prevention measures. Percent reductions for pollution prevention measures shall be determined as specified in paragraph (j) of this section.

(i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the

reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990, unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990.

(2) Group 1 emission points that are controlled by a reference control technology, unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting the specifications of § 63.119(b) of this subpart applied to a storage vessel is achieving greater than 95 percent control.

(3) Emission points on shut-down process units. Process units that are shut down cannot be used to generate credits or debits.

(4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. For the purposes of this section, the terms wastewater and wastewater stream are used to mean process wastewater.

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal

rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(e) For all points included in an emissions average, the owner or operator shall:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The owner or operator may choose to include more than the required number of credit-generating emission points in an average in order to increase the likelihood of being in compliance.

(ii) The initial demonstration in the Implementation Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions. After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) pe-

riod according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in §63.152(c) of this subpart. Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by §63.152(c)(5)(iv)(B) of this subpart.

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:

(1) More than 20 individual Group 1 or Group 2 emission points. Where pollution prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.

(2) Periods of start-up, shutdown, and malfunction as described in the source's start-up, shutdown, and malfunction plan required by §63.6(e)(3) of subpart A of this part.

(3) Periods of monitoring excursions as defined in §63.152(c)(2)(ii)(A) of this subpart. For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in paragraph (l) of this section.

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the reference con-

trol technology, and the emissions allowed for the Group 1 emission point. Debits shall be calculated as follows:

(1) The overall equation for calculating source-wide debits is:

$$\begin{aligned} \text{Debits} = & \sum_{i=1}^n \left(\text{EPV}_{i\text{ACTUAL}} - (0.02)\text{EPV}_{iu} \right) + \sum_{i=1}^n \left(\text{ES}_{i\text{ACTUAL}} \right. \\ & \left. - (0.05)\text{ES}_{iu} \right) + \sum_{i=1}^n \left(\text{ETR}_{i\text{ACTUAL}} - (0.02)\text{ETR}_{iu} \right) \\ & + \sum_{i=1}^n \left(\text{EWW}_{i\text{ACTUAL}} - \text{EWW}_{ic} \right) \end{aligned}$$

where:

Debits and all terms of the equation are in units of megagrams per month, and

$\text{EPV}_{i\text{ACTUAL}}$ =Emissions from each Group 1 process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section.

(0.02) EPV_{iu} =Emissions from each Group 1 vent i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section.

$\text{ES}_{i\text{ACTUAL}}$ =Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section.

(0.05) ES_{iu} =Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(3) of this section.

$\text{ETR}_{i\text{ACTUAL}}$ =Emissions from each Group 1 transfer rack i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section.

(0.02) ETR_{iu} =Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(4) of this section.

$\text{EWW}_{i\text{ACTUAL}}$ =Emissions from each Group 1 wastewater stream i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section.

EWW_{ic} =Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(5) of this section.

n =The number of emission points being included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

(2) Emissions from process vents shall be calculated as follows:

(i) For purposes of determining process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A of part 60,

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appendix A, shall be used for selection of the sampling site.

(ii) The following equation shall be used for each process vent i to calculate EPV_{iu} :

$$EPV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right)$$

where:

EPV_{iu} =Uncontrolled process vent emission rate from process vent i , megagrams per month.

Q =Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

h =Monthly hours of operation during which positive flow is present in the vent, hours per month.

C_j =Concentration, parts per million by volume, dry basis, of organic HAP j as measured by Method 18 of part 60, appendix A.

M_j =Molecular weight of organic HAP j , gram per gram-mole.

n =Number of organic HAP's.

(A) The values of Q , C_j , and M_j shall be determined during a performance test conducted under representative operating conditions. The values of Q ,

C_j , and M_j shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q , C_j , and M_j are no longer representative, a new performance test shall be conducted to determine new representative values of Q , C_j , and M_j . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $EPV_{iACTUAL}$:

(A) If the vent is not controlled by a control device or pollution prevention measure, $EPV_{iACTUAL} = EPV_{iu}$, where EPV_{iu} is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

$$EPV_{iACTUAL} = EPV_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction shall be measured according to the procedures in § 63.116 of this subpart if a combustion control device is used. For a flare meeting the criteria in § 63.116(a) of this subpart, or a boiler or process heater meeting the criteria in § 63.116(b) of this subpart, the percent reduction shall be 98 percent. If a non-combustion control device is used, percent reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(2) For determining debits from Group 1 process vents, product recovery devices shall not be considered con-

trol devices and cannot be assigned a percent reduction in calculating $EPV_{iACTUAL}$. The sampling site for measurement of uncontrolled emissions is after the final product recovery device. However, as provided in § 63.113(a)(3) of this subpart, a Group 1 process vent may add sufficient product recovery to raise the TRE index value above 1.0, thereby becoming a Group 2 process vent.

(3) Procedures for calculating the percent reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated as follows:

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(i) The following equation shall be used for each storage vessel i to calculate ES_{iu} :

$$ES_{iu} = \frac{L_B + L_W}{12}$$

where:

ES_{iu} =Uncontrolled emissions, defined as emissions from a fixed roof vessel having identical dimensions and vessel color as vessel i, megagrams per month.

L_B =Breathing loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(A) of this section.

L_W =Working loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(B) of this section.

12=Constant, months per year.

(A) Breathing loss emissions shall be calculated using the following equation:

$$L_B = 1.02 \times 10^{-5} M_v \left(\frac{P}{P_A - P} \right) 0.68 D^{1.73} H^{0.51} \Delta T^{0.50} F_p C K_C$$

where:

M_v =Molecular weight of vapor in storage vessel, pound per pound-mole.

P_A =Average atmospheric pressure, pounds per square inch absolute.

P =True vapor pressure of the HAP at liquid storage temperature, pounds per square inch absolute. See table 21 of this subpart.

D = Tank diameter, feet.

H =Average vapor space height, feet. Use vessel-specific values or an assumed value of one-half the height.

ΔT =Average ambient diurnal temperature change, °F. A typical value of 20 °F may be used.

F_p =Paint factor, dimensionless, from table 22 of this subpart; use $F_p=1$ for vessels located indoors.

C =Adjustment factor for small diameter tanks, dimensionless; use $C=1$ for diameter ≥ 30 feet; use $C = 0.0771D - 0.0013D^2 - 0.1334$ for diameter < 30 feet.

K_C =Product factor, dimensionless. Use 1.0 for organic HAP's.

(B) Working losses shall be calculated using the following equation:

$$L_W = 1.089 \times 10^{-8} M_v (P)(V)(N)(K_N)(K_C)$$

where:

V =Tank capacity, gallon.

N =Number of turnovers per year.

K_N =Turnover factor, dimensionless, and

$$K_N = \frac{180 + N}{6N} \text{ for turnovers } > 36$$

$$K_N = 1 \text{ for turnovers } \leq 36.$$

M_v , P , and K_C as defined in paragraph (g)(3)(i)(A) of this section.

(C) The owner or operator may elect to calculate ES_{iu} in accordance with the methods described in American Petroleum Institute Publication 2518, Evaporative Loss from Fixed-Roof Tanks (incorporated by reference as specified in § 63.14 of this part).

(1) The owner or operator who elects to use these alternative methods must use them for all storage vessels included in the emissions average as debit or credit generating points.

(2) The equations of paragraphs (g)(3)(i)(A) and (g)(3)(i)(B) of this section shall not be used in conjunction with the alternative methods provided under paragraph (g)(3)(i)(C) of this section.

(ii) The following procedures and equations shall be used for each fixed roof storage vessel i that is not controlled with a floating roof to calculate $ES_{iACTUAL}$:

(A) If the vessel is not controlled, $ES_{iACTUAL} = ES_{iu}$, where ES_{iu} is calculated according to the procedures in paragraph (g)(3)(i) of this section.

(B) Except as provided in paragraph (g)(3)(ii)(C) of this section, if the vessel

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is controlled using a control device or pollution prevention measure achieving less than 95-percent reduction,

$$ES_{iACTUAL} = ES_{iu} * \left(\frac{1 - \text{Percent reduction}}{100} \right)$$

(1) The percent reduction for a control device shall be determined through a design evaluation according to the procedures specified in § 63.120(d) of this subpart.

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(C) If the vessel is controlled according to the provisions of § 63.119(e)(2) of this section whereby the control device is only required to achieve at least 90-percent reduction, the vessel shall not be considered to be generating debits.

(iii) The following equation shall be used for each internal floating roof vessel i that does not meet the specifications of § 63.119(b) or (d) of this subpart to calculate $ES_{iACTUAL}$:

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F + L_D}{12}$$

where:

L_W =Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(A) of this section.

L_R =Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(B) of this section.

L_F =Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(C) of this section.

L_D =Deck seam loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(D) of this section.

12=Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{1.018 \times 10^{-5} Q C W_L}{D} \left[1 + \left(\frac{N_c F_c}{D} \right) \right]$$

where:

Q =Throughput, gallon per year; (gallon/turnover) * (turnovers per year).

C =Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart.

W_L =Average liquid density, pound per gallon.

D =Tank diameter, feet.

N_c =Number of columns, dimensionless, see table 24 of this subpart.

F_c =Effective column diameter, feet [column perimeter (feet)+3.1416], see table 25 of this subpart.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^n P^* D M_v K_c}{2,205}$$

where:

M_v =Molecular weight of vapor in storage vessel, pound per pound-mole.

D =Tank diameter, feet.

K_c =Product factor, dimensionless; use 1.0 for organic HAP's.

K_s =Seal factor, pound-mole per [foot (miles per hour)ⁿ year], see table 26 of this subpart.

V =Average wind speed at the source, miles per hour. A value of 10 miles per hour may be assumed if source-specific data are not available.

n =Seal related wind speed exponent, dimensionless, see table 26 of this subpart.

2,205=Constant, pounds per megagram.

P^* =Vapor pressure function, dimensionless, and

$$P^* = \frac{\frac{P}{P_A}}{\left[1 + \left(1 - \frac{P}{P_A} \right) 0.5 \right]^2}$$

where:

P_A =Average atmospheric pressure, pounds per square inch absolute.

P =True vapor pressure at liquid storage temperature, pounds per square inch absolute.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_f P^* M_v K_c}{2,205}$$

$$F_f = \sum_{i=1}^n (N_{F_i} K_{F_i}) = \left[(N_{F_1} K_{F_1}) + (N_{F_2} K_{F_2}) + \dots + (N_{F_n} K_{F_n}) \right]$$

N_{F_i} =Number of fittings of a particular type, dimensionless. N_{F_i} is determined for the specific tank or estimated from tables 24 and 27 of this subpart.

K_{F_i} =Deck fitting loss factor for a particular type fitting, pound-mole per year. K_{F_i} is determined for each fitting type from table 27 of this subpart.

n =Number of different types of fittings, dimensionless.

P^* , M_v , K_c , and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(D) Deck seam loss emissions shall be calculated using the following equation:

$$L_D = \frac{K_D S_D D^2 P^* M_v K_c}{2,205}$$

where:

K_D =Deck seam loss factor, pound-mole per foot per year, and

$K_D=0.34$ for non-welded decks.

$K_D=0$ for welded decks.

S_D =Deck seam length factor, feet per square foot, see table 28 of this subpart.

D , P^* , M_v , K_c , and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(iv) The following equation shall be used for each external floating roof vessel i that does not meet the specifications of §63.119(c) of this subpart to calculate $ES_{iACTUAL}$:

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F}{12}$$

where:

L_W =Withdrawal loss emissions, megagrams per year, calculated ac-

where:

F_f =The total deck fitting loss factor, pound-mole per year, and

where:

cording to paragraph (g)(3)(iv)(A) of this section.

L_R =Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(B) of this section.

L_F =Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(C) of this section.

12=Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{4.28 \cdot 10^{-4} Q C W_L}{D}$$

where:

Q =Throughput, gallons per year.

C =Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart.

W_L =Average liquid density, pound per gallon.

D =Vessel diameter, feet.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^N P^* D M_v K_c}{2,205}$$

where:

K_s =Seal factor, pound-mole per [foot (miles per hour)^N year], see table 29 of this subpart.

V =Average wind speed, miles per hour, at the source. A value of 10 miles per hour may be assumed if source-specific data are not available.

N =Seal wind speed exponent, dimensionless, see table 29 of this subpart.

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P*=Vapor pressure function, dimensionless, as defined in paragraph (g)(3)(iii)(B) of this section.

D=Vessel diameter, feet.

M_v=Molecular weight of the HAP, pound per pound-mole.

K_c=Product factor, dimensionless; use 1.0 for organic HAP's.

2,205=Constant, pounds per megagram.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_F P^* M_v K_c}{2,205}$$

where:

F_F=The total deck fitting loss factor, pound-mole per year, and

$$F_F = \sum_{i=1}^n (N_{F_i} K_{F_i}) = \left[(N_{F_1} K_{F_1}) + (N_{F_2} K_{F_2}) + \dots + (N_{F_n} K_{F_n}) \right]$$

where:

N_{F_i}=Number of fittings of a particular type, dimensionless. N_{F_i} is determined for the specific tank or estimated from tables 30 through 32 of this subpart.

K_{F_i}=Deck fitting loss factor for a particular type fitting, pound-mole per year, and

K_{F_i}=K_{F_{ai}}+K_{F_{bi}} V^{mi}, pound-mole per year, see table 30 of this subpart for the appropriate values of K_{F_a}, K_{F_b}, and m for each fitting type.

V, P*, M_v, K_c, and 2,205 as defined in paragraph (g)(3)(iv)(B) of this section.

(4) Emissions from transfer racks shall be calculated as follows:

(i) The following equation shall be used for each transfer rack i to calculate ETR_{iu}:

$$ETR_{iu} = \left(1.20 \times 10^{-7} \right) \frac{SPMG}{T}$$

where:

ETR_{iu}=Uncontrolled transfer HAP emission rate from transfer rack i, megagrams per month.

S=Saturation factor, dimensionless (see table 33 of this subpart).

P=Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals.

M = Weighted average molecular weight of organic HAP's trans-

ferred at the transfer rack during the month, gram per gram-mole.

G = Monthly volume of organic HAP's transferred, liters per month.

T = Weighted rack bulk liquid loading temperature during the month, Kelvin (°C + 273).

(ii) The following equation shall be used for each transfer rack i to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{j=1}^n (P_j)(G_j)}{G}$$

where:

P_j = Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals.

G = Monthly volume of organic HAP transferred, liters per month, and

$$G = \sum_{j=1}^n G_j$$

G_j = Monthly volume of individual organic HAP transferred at the transfer rack, liters per month.

n = Number of organic HAP's transferred at the transfer rack.

(iii) The following equation shall be used for each transfer rack i to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{j=1}^n (M_j)(G_j)}{G}$$

where:

M_j = Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole.

G , G_j , and n as defined in paragraph (g)(4)(ii) of this section.

(iv) The following equation shall be used for each transfer rack i to calculate the monthly weighted rack bulk liquid loading temperature:

$$T = \frac{\sum_{j=1}^n (T_j)(G_j)}{G}$$

$$ETR_{iACTUAL} = ETR_{iu} \left(\frac{1 - \text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §63.128(a) of this subpart. For a flare meeting the criteria in §63.128(b) of this subpart or a boiler or process heater meeting the criteria in §63.128(c) of this subpart, the percent reduction shall be 98 percent. If testing is not feasible, percent reduction shall be determined through a design evaluation according to the procedures specified in §63.128(h) of this subpart.

where:

T_j = Average annual bulk temperature of individual organic HAP loaded at the transfer rack, Kelvin ($^{\circ}\text{C} + 273$).

G , G_j , and n as defined in paragraph (g)(4)(ii) of this section.

(v) The following procedures and equations shall be used to calculate $ETR_{iACTUAL}$:

(A) If the transfer rack is not controlled, $ETR_{iACTUAL} = ETR_{iu}$, where ETR_{iu} is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the transfer rack is controlled using a control device or a pollution prevention measure achieving less than the 98-percent reduction,

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from wastewater shall be calculated as follows:

(i) The following equation shall be used for each wastewater stream i to calculate EW_{ic} :

$$EW_{ic} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s (1 - Fr_m) Fe_{mHAP_{im}} + (0.05) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s (Fr_m HAP_{im})$$

Where:

EW_{ic} = Monthly wastewater stream emission rate if wastewater stream i is controlled by the reference control technology, megagrams per month.

Q_i = Average flow rate for wastewater stream i , as determined by the procedure in §63.144(c)(3), liters per minute.

H_i = Number of hours during the month that wastewater stream i was generated, hours per month.

s = Total number of organic HAP in wastewater stream i .

Fr_m = Fraction removed of organic HAP m in wastewater, from table 9 of this subpart, dimensionless.

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Fe_m = Fraction emitted of organic HAP m in wastewater, from table 34 of this subpart, dimensionless.

HAP_{im} = Average concentration of organic HAP m in wastewater stream i, parts per million by weight.

(A) HAP_{im} shall be determined for the point of generation or at a location downstream of the point of generation using the sampling procedure in § 63.144(b)(5)(i)(C) of this subpart. The samples collected may be analyzed by either of the following procedures:

(1) A test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated pursuant to section 5.1 or 5.3 of Method 301 of appendix A of this part may be used; or

(2) Method 305 of appendix A of this part may be used to determine C_{im} , the average VOHAP concentration of organic HAP m in wastewater stream i, and then HAP_{im} may be calculated using the following equation:

$$HAP_{im} = C_{im}/Fm_m,$$

where Fm_m for organic HAP m is obtained from table 34 of this subpart.

(B) Values for Q_i , HAP_{im} , and C_{im} shall be determined during a performance test conducted under representative conditions. The average value obtained from three test runs shall be used. The values of Q_i , HAP_{im} , and C_{im} shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(5)(i)(C) of this section.

(C) If there is a change to the process or operation such that the previously measured values of Q_i , HAP_{im} , and C_{im} are no longer representative, a new performance test shall be conducted to determine new representative values of Q_i , HAP_{im} , and C_{im} . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(ii) The following equation shall be used to calculate $EWW_{iACTUAL}$ for each wastewater stream i that is not managed according to the provisions for waste management units of §§ 63.133 through 63.137 or § 63.138(i)(3) of this subpart, as applicable, which specify equipment and work practices for suppressing and controlling vapors.

$$EWW_{iACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s Fe_m HAP_{im}$$

where:

$EWW_{iACTUAL}$ = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

Q_i , H_i , s , Fe_m , and HAP_{im} are as defined and determined according to paragraph (g)(5)(i) of this section.

(iii) The following equation shall be used to calculate $EWW_{iACTUAL}$ for each wastewater stream i that is managed according to the requirements of §§ 63.133 through 63.137 or § 63.138(i)(3) of this subpart, as applicable, and wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology (for the purposes of the wastewater emissions averaging provisions, the term control is used to mean treatment):

$$\begin{aligned} EWW_{iACTUAL} = & \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[Fe_m HAP_{im} (1 - PR_{im}) \right] \\ & + \left(1 - \frac{R_i}{100\%}\right) \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^s (HAP_{im} PR_{im}) \end{aligned}$$

where:

$EWW_{iACTUAL}$ = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

PR_{im} = The efficiency of the treatment process, or series of treatment processes, which treat wastewater stream i , in reducing the emission potential of organic HAP m in wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{HAP_{im-in} - HAP_{im-out}}{HAP_{im-in}}$$

where:

HAP_{im-in} = Average concentration of organic HAP m , parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater entering the first treatment process in the series.

HAP_{im-out} = Average concentration of organic HAP m , parts per million by

weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater exiting the last treatment process in the series.

R_i = Reduction efficiency of the device used to control any vapor streams emitted and collected from wastewater stream i during treatment, dimensionless, as determined according to the procedures in § 63.145(e) of this subpart.

Q_i , H_i , s , Fe_m , and HAP_{im} are as defined and determined according to paragraph (g)(5)(i) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating source-wide credits is:

$$\begin{aligned} \text{Credits} = & D \sum_{i=1}^n \left((0.02) EPV1_{iu} - EPV1_{iACTUAL} \right) + D \sum_{i=1}^m (EPV2_{iBASE} - EPV2_{iACTUAL}) + D \sum_{i=1}^n \\ & \left((0.05) ES1_{iu} - ES1_{iACTUAL} \right) + D \sum_{i=1}^m (ES2_{iBASE} - ES2_{iACTUAL}) + D \sum_{i=1}^n \left((0.02) ETR1_{iu} - ETR1_{iACTUAL} \right) \\ & + D \sum_{i=1}^m (ETR2_{iBASE} - ETR2_{iACTUAL}) + D \sum_{i=1}^n (EWW1_{ic} - EWW1_{iACTUAL}) + D \sum_{i=1}^m (EWW2_{iBASE} - EWW2_{iACTUAL}) \end{aligned}$$

where: Credits and all terms of the equation are in units of megagrams per month, the baseline date is November 15, 1990, and:

D = Discount factor = 0.9 for all credit generating emission points except

those controlled by a pollution prevention measure, which will not be discounted.

$EPV1_{iACTUAL}$ = Emissions for each Group 1 process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section.

(0.02) $EPV1_{iu}$ = Emissions from each Group 1 process vent i if the reference control technology had been applied to the uncontrolled emissions. $EPV1_{iu}$ is calculated according to paragraph (h)(2) of this section.

$EPV2_{iACTUAL}$ = Emissions from each Group 2 process vent i that is controlled, calculated according to paragraph (h)(2) of this section.

$EPV2_{iBASE}$ = Emissions from each Group 2 process vent i at the baseline date, as calculated in paragraph (h)(2) of this section.

$ES1_{iACTUAL}$ = Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section.

(0.05) $ES1_{iu}$ = Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. $ES1_{iu}$ is calculated according to paragraph (h)(3) of this section.

$ES2_{iACTUAL}$ = Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section.

$ES2_{iBASE}$ = Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section.

$ETR1_{iACTUAL}$ = Emissions from each Group 1 transfer rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

(0.02) $ETR1_{iu}$ = Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions. $ETR1_{iu}$ is calculated according to paragraph (h)(4) of this section.

$ETR2_{iACTUAL}$ = Emissions from each Group 2 transfer rack i that are

controlled, calculated according to paragraph (h)(4) of this section.

$ETR2_{iBASE}$ = Emissions from each Group 2 transfer rack i at the baseline date, as calculated in paragraph (h)(4) of this section.

$EW1_{iACTUAL}$ = Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(5) of this section.

$EW1_{ic}$ = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(5) of this section.

$EW2_{iACTUAL}$ = Emissions from each Group 2 wastewater stream i that is controlled, calculated according to paragraph (h)(5) of this section.

$EW2_{iBASE}$ = Emissions from each Group 2 wastewater stream i at the baseline date, calculated according to paragraph (h)(5) of this section.

n = Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

m = Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

(i) For an emission point controlled using a reference control technology, the percent reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be as determined as described in paragraph (j) of this section.

(2) Emissions from process vents shall be determined as follows:

(i) Uncontrolled emissions from Group 1 process vents, $EPV1_{iu}$, shall be calculated according to the procedures

and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from Group 1 process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $EPV1_{iACTUAL}$, shall be calculated according to the following equation:

$$EPV1_{iACTUAL} = EPV1_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents, $EPV2_{iACTUAL}$:

(A) For a Group 2 process vent controlled by a control device, a recovery

device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percent reduction less than or equal to 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) $EPV2_{iu}$ shall be calculated according to the equations and procedures for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section, except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section, except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(3) If a recovery device was added as part of a pollution prevention project, $EPV2_{iu}$ shall be calculated prior to that recovery device. The equation for EPV_{iu} in paragraph (g)(2)(ii) of this sec-

tion shall be used to calculate $EPV2_{iu}$; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(4) If a recovery device was added as part of a pollution prevention project, the percent reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 process vent controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

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(iv) Emissions from Group 2 process vents at baseline, $EPV2_{iBASE}$, shall be calculated as follows:

(A) If the process vent was uncontrolled on November 15, 1990, $EPV2_{iBASE}=EPV2_{iu}$ and shall be cal-

culated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the process vent was controlled on November 15, 1990,

$$EPV2_{iBASE} = EPV2_{iu} \left(1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where $EPV2_{iu}$ is calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percent reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990, $EPV2_{iBASE}=EPV2_{iu}$, where $EPV2_{iu}$ is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from storage vessels shall be determined as follows:

(i) Uncontrolled emissions from Group 1 storage vessels, $ES1_{iu}$, shall be calculated according to the equations and procedures for ES_{iu} in paragraph (g)(3)(i) of this section.

(ii) Actual emissions from Group 1 storage vessels controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent emission reduction, $ES1_{iACTUAL}$, shall be calculated according to the following equation:

$$ES1_{iACTUAL} = ES1_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 storage vessels, $ES2_{iACTUAL}$:

(A) For a Group 2 storage vessel controlled using a control device or a pol-

lution prevention measure (other than an internal or external floating roof) achieving a percent reduction less than or equal to 95-percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) $ES2_{iu}$ is calculated according to the equations and procedures for ES_{iu} in paragraph (g)(3)(i) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(3) If an internal or external floating roof meeting the specifications of § 63.119 (b), (c), or (d) of this subpart is used to control the vessel, the percent reduction shall be 95 percent.

(B) If a Group 2 storage vessel is controlled with an internal or external

floating roof not meeting the specifications of §63.119 (b), (c), or (d) of this subpart, $ES2_{iACTUAL}$ shall be calculated as specified for $ES_{iACTUAL}$ in paragraph (g)(3)(iii) or (g)(3)(iv) of this section.

(C) For a Group 2 storage vessel controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iv) Emissions from Group 2 storage vessels at baseline, $ES2_{iBASE}$, shall be calculated as follows:

(A) If the fixed-roof vessel was uncontrolled on November 15, 1990, $ES2_{iBASE} = ES2_{iu}$ and shall be calculated according to the procedures and equations for ES_{iu} in paragraph (g)(3)(i) of this section.

(B) If the storage vessel was controlled on November 15, 1990:

(1) The equations for $ES_{iACTUAL}$ in paragraph (g)(3)(iii) of this section shall be used to calculate $ES2_{iBASE}$ for

vessels controlled with an internal floating roof that does not meet the specifications of §63.119 (b) or (d) of this subpart.

(2) The equations for $ES_{iACTUAL}$ in paragraph (g)(3)(iv) of this section shall be used to calculate $ES2_{iBASE}$ for vessels controlled with an external floating roof that does not meet the specifications of §63.119(c) of this subpart.

(3) The following equations shall be used to calculate $ES2_{iBASE}$ for vessels controlled with a control device,

$$ES2_{iBASE} = ES2_{iu} \left(1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where $ES2_{iu}$ shall be calculated according to the equations for ES_{iu} in paragraph (g)(3)(i) of this section. The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(4) Emissions from transfer racks shall be determined as follows:

(i) Uncontrolled emissions from Group 1 transfer racks, $ETR1_{iu}$, shall be calculated according to the procedures

and equations for ETR_{iu} as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(ii) Actual emissions from Group 1 transfer racks controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $ETR_{iACTUAL}$, shall be calculated according to the following equation:

$$ETR1_{iACTUAL} = ETR1_{iu} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions

from Group 2 transfer racks, $ETR2_{iACTUAL}$:

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(A) For a Group 2 transfer rack controlled by a control device or a pollution prevention measure achieving a

percent reduction less than or equal to 98 percent reduction,

$$ETR2_{iACTUAL} = ETR2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) $ETR2_{iu}$ shall be calculated according to the equations and procedures for ETR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraph (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

(B) For a Group 2 transfer rack controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$ETR2_{iACTUAL} = ETR2_{iu} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iv) Emissions from Group 2 transfer racks at baseline, $ETR2_{iBASE}$, shall be calculated as follows:

(A) If the transfer rack was uncontrolled on November 15, 1990, $ETR2_{iBASE} = ETR2_{iu}$ and shall be calculated

according to the procedures and equations for ETR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the transfer rack was controlled on November 15, 1990,

$$ETR2_{iBASE} = ETR2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where $ETR2_{iu}$ is calculated according to the procedures and equations for ETR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percent reduction shall be calculated according to the procedures in paragraphs (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

(5) Emissions from wastewater shall be determined as follows:

(i) $EWV1_{ic}$ shall be calculated according to the equation for EWV_{ic} in paragraph (g)(5)(i) of this section.

(ii) $EWV2_{iBASE}$ shall be calculated according to the equation for $EWV_{iACTUAL}$ in paragraph (g)(5)(ii) of this section for each Group 2 wastewater stream i, which, on November 15, 1990, was not managed according to the require-

ments of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable.

(iii) $EWV2_{iBASE}$ shall be calculated according to the equation for $EWV_{iACTUAL}$ in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i, which, on November 15, 1990, was managed according to the requirements of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable, and was uncontrolled or controlled to a level less stringent than the reference control technology.

(iv) For Group 2 wastewater streams that are managed according to the requirements of §§63.133 through 63.137 or

§63.138(i)(3) of this subpart, as applicable, $EW\!W2_{iACTUAL}$ shall be calculated as follows:

(A) $EW\!W2_{iACTUAL}$ shall be calculated according to the equation for $EW\!W1_{iACTUAL}$ in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i that is controlled to a level less stringent than, or equivalent to, the reference control technology.

(B) $EW\!W2_{iACTUAL}$ shall be calculated according to the procedures for calculating $EW\!W1_{iACTUAL}$ in paragraph (h)(5)(v) of this section for each Group 2 wastewater stream that is controlled to a level more stringent than the reference control technology.

(v) The following equations for $EW\!W1_{iACTUAL}$ shall be used to calculate emissions from each Group 1 waste-

water stream i that is managed according to the requirements of §§63.133 through 63.137 or §63.138(i)(3) of this subpart, as applicable, and is controlled to a level more stringent than the reference control technology.

(A) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the total VOHAP concentration of stream i greater than that of the design steam stripper specified in §63.138(g) of this subpart, and the control device used to reduce organic HAP emissions from the vapor stream(s) vented from the treatment process(es) achieves a percent reduction equal to 95 percent, the following equation shall be used:

$$EW\!W1_{iACTUAL} = \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[Fe_m HAP_{im} (1 - Fr_m) \right] \\ + \left(1 - \frac{\text{Nominal efficiency \%}}{100} \right) \left(6.0 \cdot 10^{-8} \right) Q_i H_i \sum_{m=1}^s \left[HAP_{im} Fr_m \right]$$

where all terms are as defined and determined in paragraph (g)(5) of this section.

(B) If the Group 1 wastewater stream i is not controlled using a treatment process or series of treatment processes with a nominal reduction efficiency in the total VOHAP concentration great-

er than that of the design steam stripper specified in §63.138(g) of this subpart, but the vapor stream(s) vented from the treatment process(es) are controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EW\!W1_{iACTUAL} = \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[Fe_m HAP_{im} (1 - Fr_m) \right] \\ + \left(1 - \frac{\text{Nominal efficiency \%}}{100} \right) \left(6.0 \cdot 10^{-8} \right) Q_i H_i \sum_{m=1}^s \left[HAP_{im} Fr_m \right]$$

where all terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

(C) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes

with an approved nominal reduction efficiency in the total VOHAP concentration greater than that of the design steam stripper specified in §63.138(g) of this subpart, and the vapor stream(s) vented from the treatment process are

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controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EW\text{W}1_{\text{ACTUAL}} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m \text{HAP}_{im} (1 - PR_{im})] \\ + \left(1 - \frac{\text{Nominal efficiency \%}}{100} \right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [\text{HAP}_{im} PR_{im}]$$

where all terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

(i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percent reductions than the percent efficiencies assigned to the reference control technologies in § 63.111 of this subpart.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant-site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Director of the EPA Office of Air Quality Planning and Standards in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance.

(ii) Description of the control technology including design specifications.

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible

to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented.

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may condition permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology

that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) can be submitted to the permitting authority for the source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority as part of an operating permit application or modification. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the application, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percent reduction) of pollution prevention measures:

(1) A pollution prevention measure is any practice which meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions, while the same product is produced.

(ii) Pollution prevention measures may include: substitution of feedstocks that reduce HAP emissions; alterations to the production process to reduce the volume of materials released to the environment; equipment modifications; housekeeping measures; and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990, can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percent reduction used in the equations in paragraphs (g)(2) through (g)(5) of this section and paragraphs (h)(2) through (h)(5) of this section is the percent difference between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) The following equation shall be used to calculate the percent reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B - \frac{(E_{pp} \times P_B)}{P_{pp}}}{E_B} \times 100\%$$

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where:

Percent reduction=Efficiency of pollution prevention measure (percent organic HAP reduction).

E_B =Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

E_{pp} =Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

P_B =Monthly production before the pollution prevention measure, megagrams per month, during the same period over which E_B is calculated.

P_{pp} =Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure, E_B , shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), and (g)(4) of this section for process vents, storage vessels, and transfer operations.

(B) For wastewater, E_B shall be calculated as follows:

$$E_B = \sum_{i=1}^n \left[\left(6.0 \times 10^{-8} \right) Q_{Bi} H_{Bi} \sum_{m=1}^s Fe_m HAP_{Bim} \right]$$

where:

n =Number of wastewater streams.

Q_{Bi} =Average flow rate for wastewater stream i before the pollution prevention measure, defined and determined according to paragraph (g)(5)(i) of this section, liters per minute, before implementation of the pollution prevention measure.

H_{Bi} =Number of hours per month that wastewater stream i was discharged before the pollution prevention measure, hours per month.

s =Total number of organic HAP's in wastewater stream i .

Fe_m =Fraction emitted of organic HAP m in wastewater from table 9 of this subpart, dimensionless.

HAP_{Bim} =Average concentration of organic HAP m in wastewater stream i , defined and determined according

to paragraph (g)(5)(i) of this section, before the pollution prevention measure, parts per million by weight, as measured before the implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to April 22, 1994, records may be used to determine E_B .

(D) The monthly emissions after the pollution prevention measure, E_{pp} , may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater, E_{pp} shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^n \left[\left(6.0 \times 10^{-8} \right) Q_{ppi} H_{ppi} \sum_{m=1}^s Fe_m HAP_{ppim} \right]$$

where n , Q_{ppi} , H_{ppi} , s , Fe_m , and HAP_{ppim} are defined and determined as de-

scribed in paragraph (j)(2)(ii)(B) of this section except that Q_{ppi} , H_{ppi} , and

HAP_{ppim} shall be determined after the pollution prevention measure has been implemented.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percent reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percent reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(5) of this section, used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percent reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator must demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the operating permit authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§63.113 through 63.148.

(l) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the operating permit authority.

(i) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their operating permit application or in their Implementation Plan if an operating

permit application has not yet been submitted.

(3) An emissions averaging plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§63.113 through 63.148 of this subpart.

(4) A hazard or risk equivalency demonstration must:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the Administrator for such demonstrations.

(l) For periods of excursions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of excursions in the Periodic Reports as required in §63.152 of this subpart.

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures of demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the excursion and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

(m) For each Group 1 or Group 2 emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§ 63.113 through 63.148 of this subpart. The specific requirements for process vents, storage vessels, transfer racks, and wastewater are identified in paragraphs (m)(1) through (m)(6) of this section.

(1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each process vent equipped with a flare, incinerator, boiler, or process heater.

(i) Determine whether the process vent is Group 1 or Group 2 according to the procedures in § 63.115 of this subpart.

(ii) Conduct initial performance tests to determine percent reduction as specified in § 63.116 of this subpart;

(iii) Monitor the operating parameters, keep records, and submit reports specified in § 63.114, § 63.117(a), and § 63.118 (a), (f), and (g) of this subpart, as appropriate for the specific control device.

(2) The source shall implement the following procedures for each process vent equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:

(i) Determine the flow rate, organic HAP concentration, and TRE index value using the methods specified in § 63.115 of this subpart;

(ii) Monitor the operating parameters, keep records, and submit reports specified in § 63.114, § 63.117(a), and § 63.118(b), (f), and (g) of this subpart, as appropriate for the specific recovery device.

(3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures in § 63.120 of this subpart,

(ii) Perform the reporting and recordkeeping procedures in §§ 63.122 and 63.123 of this subpart, and

(iii) For closed vent systems with control devices, conduct an initial design evaluation and submit an operating plan as specified in § 63.120(d) and § 63.122(a)(2) and (b) of this subpart.

(4) The source shall implement the following procedures for each transfer rack controlled with a vapor balancing system, or a vapor collection system and an incinerator, flare, boiler, process heater, adsorber, condenser, or absorber, as appropriate to the control technique:

(i) The monitoring and inspection procedures in § 63.127 of this subpart,

(ii) The testing and compliance procedures in § 63.128 of this subpart, and

(iii) The reporting and recordkeeping procedures in § 63.129 and § 63.130 of this subpart.

(5) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests as specified in § 63.138(i) and (j) of this subpart.

(ii) Conduct inspections and monitoring as specified in § 63.143 of this subpart.

(iii) A recordkeeping program as specified in § 63.147 of this subpart.

(iv) A reporting program as specified in § 63.146 of this subpart.

(6) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in § 63.114, § 63.120, § 63.127, or § 63.143 of this subpart, the owner or operator shall submit the information specified in § 63.151(f) of this subpart in the Implementation Plan or operating permit application.

(n) Records of all information required to calculate emission debits and credits shall be retained for five years.

(o) Initial Notifications, Implementation Plans, Notifications of Compliance Status, Periodic Reports, and other reports shall be submitted as required by § 63.151 and § 63.152 of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995]

§ 63.151 Initial notification.

(a) Each owner or operator of a source subject to this subpart shall

submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.

(1) An Initial Notification described in paragraph (b) of this section, and

(2) An Implementation Plan for new sources subject to this subpart or for emission points to be included in an emissions average, unless an operating permit application has been submitted prior to the date the Implementation Plan is due and the owner or operator has elected to include the information specified in §63.152(e) in that application. The submittal date and contents of the Implementation Plan are specified in paragraphs (c) and (d) of this section.

(3) A Notification of Compliance Status described in §63.152 of this subpart.

(4) Periodic Reports described in §63.152 of this subpart, and

(5) Other reports described in §63.152 of this subpart.

(6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the existing source up to 1 additional year to comply with section 112(d) standards.

(i) For purposes of this subpart, a request for an extension shall be submitted to the permitting authority as part of the operating permit application or as part of the Initial Notification or as a separate submittal. Requests for extensions shall be submitted no later than 120 days prior to the compliance dates specified in §63.100(k)(2), §63.100(l)(4), and §63.100(m) of subpart F of this part, except as provided for in paragraph (a)(6)(iv) of this section. The dates specified in §63.6(i) of subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart G.

(ii) A request for an extension of compliance must include the data described in §63.6(i)(6)(i) (A), (B), and (D) of subpart A of this part.

(iii) The requirements in §63.6(i)(8) through (i)(14) of subpart A will govern the review and approval of requests for extensions of compliance with this subpart.

(iv) An owner or operator may submit a compliance extension request

after the date specified in paragraph (a)(6)(i) of this section provided the need for the compliance extension arose after that date and before the otherwise applicable compliance date, and the need arose due to circumstances beyond reasonable control of the owner or operator. This request shall include, in addition to the information in paragraph (a)(6)(ii) of this section, a statement of the reasons additional time is needed and the date when the owner or operator first learned of the problem.

(7) The reporting requirements for storage vessels are located in §63.122 of this subpart.

(b) Each owner or operator of an existing or new source subject to subpart G shall submit a written Initial Notification to the Administrator, containing the information described in paragraph (b)(1) of this section, according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in §63.9(b)(2), (b)(3), and (b)(6) of subpart A shall not apply to owners or operators of sources subject to subpart G.

(1) The Initial Notification shall include the following information:

(i) The name and address of the owner or operator;

(ii) The address (physical location) of the affected source;

(iii) An identification of the kinds of emission points within the chemical manufacturing process units that are subject to subpart G;

(iv) An identification of the chemical manufacturing processes subject to subpart G; and

(v) A statement of whether the source can achieve compliance by the relevant compliance date specified in §63.100 of subpart F.

(2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.

(i) For an existing source, the Initial Notification shall be submitted within 120 calendar days after the date of promulgation.

(ii) For a new source that has an initial start-up 90 calendar days after the date of promulgation of this subpart or later, the application for approval of

construction or reconstruction required by § 63.5(d) of subpart A shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practicable before construction or reconstruction is planned to commence (but it need not be sooner than 90 calendar days after the date of promulgation of this subpart).

(iii) For a new source that has an initial start-up prior to 90 calendar days after the date of promulgation, the Initial Notification shall be submitted within 90 calendar days after the date of promulgation of this subpart. The application for approval of construction or reconstruction described in § 63.5(d) of subpart A is not required for these sources.

(c) Each owner or operator of an existing source with emission points that will be included in an emissions average or new source subject to this subpart must submit an Implementation Plan to the Administrator by the dates specified in paragraphs (c)(1) and (c)(2) of this section, unless an operating permit application accompanied by the information specified in § 63.152(e) of this subpart has been submitted. The Implementation Plan for emissions averaging is subject to Administrator approval.

(1) Each owner or operator of an existing source subject to this subpart who elects to comply with § 63.112 of this subpart by using emissions averaging for any emission points, and who has not submitted an operating permit application accompanied by the information specified in § 63.152(e) of this subpart at least 18 months prior to the compliance dates specified in § 63.100 of subpart F of this part, shall develop an Implementation Plan for emissions averaging. For existing sources, the Implementation Plan for those emission points to be included in an emissions average shall be submitted no later than 18 months prior to the compliance dates in § 63.100 of subpart F of this part.

(2) Each owner or operator of a new source shall submit an Implementation Plan by the date specified in paragraphs (c)(2)(i) or (c)(2)(ii) of this section, as applicable, unless an operating permit application containing the in-

formation in paragraph (e) of this section has been submitted by that date.

(i) For a new source that has an initial start-up 90 calendar days after the date of promulgation of this subpart or later, the Implementation Plan shall be submitted with the application for approval of construction or reconstruction by the date specified in paragraph (b)(2)(ii) of this section.

(ii) For a new source that has an initial start-up prior to 90 calendar days after the date of promulgation, the Implementation Plan shall be submitted within 90 calendar days after the date of promulgation of this subpart.

(3) The Administrator shall determine within 120 calendar days whether the Implementation Plan submitted by sources using emissions averaging presents sufficient information. The Administrator shall either approve the Implementation Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 calendar days.

(d) Each owner or operator required to submit an Implementation Plan for emissions averaging shall include in the plan, for all emission points included in the emissions average, the information listed in paragraphs (d)(1) through (d)(8) of this section.

(1) The identification of all emission points in the planned emissions average and notation of whether each point is a Group 1 or Group 2 emission point as defined in § 63.111 of this subpart.

(2) The projected emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.150 of this subpart. The projected credits must be greater than the projected debits, as required under § 63.150(e)(3) of this subpart.

(3) The specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(4) The specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in § 63.150(j)(1) of this subpart

must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(5) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in §63.150(m), (n), and (o) of this subpart that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(6) Documentation of the information listed in paragraph (d)(6)(i) through (d)(6)(v) of this section for each process vent, storage vessel, or transfer rack included in the average.

(i) The values of the parameters used to determine whether the emission point is Group 1 or Group 2. Where TRE index value is used for process vent group determination, the estimated or measured values of the parameters used in the TRE equation in §63.115(d) of this subpart (flow rate, organic HAP emission rate, TOC emission rate, and net heating value) and the resulting TRE index value shall be submitted.

(ii) The estimated values of all parameters needed for input to the emission debit and credit calculations in §63.150 (g) and (h) of this subpart. These parameter values, or as appropriate, limited ranges for the parameter values, shall be specified in the source's Implementation Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (i)(2)(ii) of this section.

(iii) The estimated percent reduction if a control technology achieving a lower percent reduction than the efficiency of the reference control technology, as defined in §63.111 of this subpart, is or will be applied to the emission point.

(iv) The anticipated nominal efficiency if a control technology achieving a greater percent emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in §63.150(i) of this subpart shall be followed to apply for a nominal efficiency.

(v) The operating plan required in §63.122(a)(2) and (b) of this subpart for each storage vessel controlled with a closed-vent system with a control device other than a flare.

(7) The information specified in §63.151(f) of this subpart shall be included in the Implementation Plan for:

(i) Each process vent or transfer rack controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in §63.114, §63.126(b)(3), or §63.127 of this subpart, and

(ii) Each storage vessel controlled by pollution prevention or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(8) Documentation of the information listed in paragraph (d)(8)(i) through (d)(8)(iv) for each process wastewater stream included in the average.

(i) The information used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream.

(ii) The estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in §63.150 (g)(5) and (h)(5) of this subpart.

(iii) The estimated percent reduction if:

(A) A control technology that achieves an emission reduction less than or equal to the emission reduction achieved by the design steam stripper, as specified in §63.138(g) of this subpart, is or will be applied to the wastewater stream, or

(B) A control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes, or

(C) A pollution prevention measure is or will be applied.

(iv) The anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under §63.150(i) of this subpart. A nominal efficiency shall be applied for if:

(A) A control technology is or will be applied to the wastewater stream and achieves an emission reduction greater than the emission reduction achieved

by the design steam stripper as specified in § 63.138(g) of this subpart, or

(B) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(v) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP's from wastewater and for which no monitoring parameters or inspection procedures are specified in § 63.143 of this subpart, the information specified in § 63.151(f) of this subpart shall be included in the Implementation Plan.

(e) An owner or operator expressly referred to this paragraph shall report, in an Implementation Plan, operating permit application, or as otherwise specified by the permitting authority, the information listed in paragraphs (e)(1) through (e)(5) of this section.

(1) A list designating each emission point complying with §§ 63.113 through 63.149 of this subpart and whether each emission point is Group 1 or Group 2, as defined in § 63.111 of this subpart.

(2) The control technology or method of compliance that will be applied to each Group 1 emission point.

(3) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in §§ 63.113 through 63.149 of this subpart that are applicable to each emission point will be implemented beginning on the date of compliance.

(4) The operating plan required in § 63.122(a)(2) and (b) of this subpart for each storage vessel controlled with a closed vent system with a control device other than a flare.

(5) The monitoring information in § 63.151(f) of this subpart if, for any emission point, the owner or operator of a source seeks to comply through use of a control technique other than those for which monitoring parameters are specified in § 63.114 for process vents, § 63.127 for transfer, and § 63.143 for process wastewater.

(f) The owner or operator who has been directed by any section of this subpart that expressly references this paragraph to set unique monitoring parameters or who requests approval to monitor a different parameter than

those listed in § 63.114 for process vents, § 63.127 for transfer, or § 63.143 for process wastewater of this subpart shall submit the information specified in paragraphs (f)(1), (f)(2), and (f)(3) of this section with the operating permit application or as otherwise specified by the permitting authority.

(1) A description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).

(2) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that the owner or operator will establish a range for the monitored parameter as part of the Notification of Compliance Status report required in § 63.152(b) of this subpart, unless this information has already been included in the operating permit application.

(3) The frequency and content of monitoring, recording, and reporting if monitoring and recording is not continuous, or if reports of daily average values when the monitored parameter value is outside the range established in the operating permit or Notification of Compliance Status will not be included in Periodic Reports required under § 63.152(c) of this subpart. The rationale for the proposed monitoring, recording, and reporting system shall be included.

(g) An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 63.114, 63.117, and 63.118 for process vents, §§ 63.127, 63.129, and 63.130 for transfer operations, and §§ 63.143, 63.146, and 63.147 for wastewater.

(1) Requests shall be included in the operating permit application or as otherwise specified by the permitting authority and shall contain the information specified in paragraphs (g)(3) through (g)(5) of this section, as applicable.

(2) The provisions in §63.8(f)(5)(i) of subpart A shall govern the review and approval of requests.

(3) An owner or operator of a source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and generating continuous records may request approval to use a non-automated system with less frequent monitoring.

(i) The requested system shall include manual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily average values shall be calculated from these hourly values and recorded.

(ii) The request shall contain:

(A) A description of the planned monitoring and recordkeeping system;

(B) Documentation that the source does not have an automated monitoring and recording system;

(C) Justification for requesting an alternative monitoring and recordkeeping system; and

(D) Demonstration to the Administrator's satisfaction that the proposed monitoring frequency is sufficient to represent control device operating conditions considering typical variability of the specific process and control device operating parameter being monitored.

(4) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example once every 15 minutes) but records all values that meet set criteria for variation from previously recorded values.

(i) The requested system shall be designed to:

(A) Measure the operating parameter value at least once every 15 minutes.

(B) Record at least four values each hour during periods of operation.

(C) Record the date and time when monitors are turned off or on.

(D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident.

(E) Compute daily average values of the monitored operating parameter based on recorded data.

(F) If the daily average is not an excursion, as defined in §63.152(c)(2)(ii), the data for that operating day may be converted to hourly average values and the four or more individual records for each hour in the operating day may be discarded.

(ii) The request shall contain a description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all criteria in paragraph (g)(4)(i) of this section.

(5) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in §63.8(f) of subpart A of this part.

(h) The owner or operator required to prepare an Implementation Plan, or otherwise required to submit a report, under paragraph (c), (d), or (e) of this section shall also submit a supplement for any additional alternative controls or operating scenarios that may be used to achieve compliance.

(i) The owner or operator of a source required to submit an Implementation Plan for emissions averaging under paragraphs (c) and (d) of this section shall also submit written updates of the Implementation Plan to the Administrator for approval under the circumstances described in paragraphs (i)(1) and (i)(2) of this section unless the relevant information has been included and submitted in an operating permit application or amendment.

(1) The owner or operator who plans to make a change listed in paragraph (i)(1)(i) or (i)(1)(ii) of this section shall submit an Implementation Plan update at least 120 calendar days prior to making the change.

(i) Whenever an owner or operator elects to achieve compliance with the emissions averaging provisions in §63.150 of this subpart by using a control technique other than that specified in the Implementation Plan or plans to monitor a different parameter or operate a control device in a manner other than that specified in the Implementation Plan.

(ii) Whenever an emission point or a chemical manufacturing process unit is

added to an existing source and is planned to be included in an emissions average, or whenever an emission point not included in the emissions average described in the Implementation Plan is to be added to an emissions average. The information in paragraph (d) of this section shall be updated to include the additional emission point.

(2) The owner or operator who has made a change listed in paragraph (i)(2)(i) or (i)(2)(ii) of this section shall submit an Implementation Plan update within 90 calendar days after the information regarding the change is known to the source. The update may be submitted in the next quarterly Periodic Report if the change is made after the date the Notification of Compliance status is due.

(i) Whenever a process change is made such that the group status of any emission point in an emissions average changes.

(ii) Whenever a value of a parameter in the emission credit or debit equations in § 63.150(g) or (h) changes such that it is outside the range specified in the Implementation Plan and causes a decrease in the projected credits or an increase in the projected debits.

(3) The Administrator shall approve or request changes to the Implementation Plan update within 120 calendar days of receipt of sufficient information regarding the change for emission points included in emissions averages.

(j) The owner or operator of a source subject to this subpart, for emission points that are not included in an emissions average, shall report to the Administrator under the circumstances described in paragraphs (j)(1), (j)(2), and (j)(3) of this section unless the relevant information has been included and submitted in an operating permit application or amendment, or as otherwise specified by the permitting authority. The information shall be submitted within 180 calendar days after the change is made or the information regarding the change is known to the source. The update may be submitted in the next Periodic Report if the change is made after the date the Notification of Compliance Status is due.

(1) Whenever a deliberate change is made such that the group status of any emission point changes. The informa-

tion submitted shall include a compliance schedule as specified in § 63.100 of subpart F of this part if the emission point becomes Group 1.

(2) Whenever an owner or operator elects to achieve compliance with this subpart by using a control technique other than that previously reported to the Administrator or to the permitting authority, or plans to monitor a different parameter, or operate a control device in a manner other than that previously reported.

(3) Whenever an emission point or a chemical manufacturing process unit is added to a source, a written addendum to the information submitted under paragraph (e) of this section containing information on the new emission point shall be submitted.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995; 61 FR 7718, Feb. 29, 1996; 61 FR 64576, Dec. 5, 1996]

§ 63.152 General reporting and continuous records.

(a) The owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section and keep continuous records of monitored parameters as specified in paragraph (f) of this section. Owners or operators requesting an extension of compliance shall also submit the report described in § 63.151(a)(6) of this subpart.

(1) An Initial Notification described in § 63.151(b) of this subpart.

(2) An Implementation Plan described in § 63.151(c), (d), and (e) of this subpart for existing sources with emission points that are included in an emissions average or for new sources.

(3) A Notification of Compliance Status described in paragraph (b) of this section.

(4) Periodic Reports described in paragraph (c) of this section.

(5) Other reports described in paragraphs (d) and (e) of this section.

(b) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 150 calendar days after the compliance dates specified in § 63.100 of subpart F of this part.

(1) The notification shall include the results of any emission point group determinations, performance tests, inspections, continuous monitoring system performance evaluations, values of monitored parameters established during performance tests, and any other information used to demonstrate compliance or required to be included in the Notification of Compliance Status under § 63.110 (h) for regulatory overlaps, under § 63.117 for process vents, § 63.122 for storage vessels, § 63.129 for transfer operations, § 63.146 for process wastewater, and § 63.150 for emission points included in an emissions average.

(i) For performance tests and group determinations that are based on measurements, the Notification of Compliance Status shall include one complete test report for each test method used for a particular kind of emission point. For additional tests performed for the same kind of emission point using the same method, the results and any other information required in § 63.117 for process vents, § 63.129 for transfer, and § 63.146 for process wastewater shall be submitted, but a complete test report is not required.

(ii) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(2) For each monitored parameter for which a range is required to be established under § 63.114 for process vents, § 63.127 for transfer, § 63.143 for process wastewater, § 63.150(m) for emission points in emissions averages, or § 63.151(f), or § 63.152(e), the Notification of Compliance Status shall include the information in paragraphs (b)(2)(i), (b)(2)(ii), and (b)(2)(iii) of this section, unless the range and the operating day definition have been established in the operating permit. The recordkeeping and reporting requirements applicable

to storage vessels are located in §§ 63.122 and 63.123.

(i) The specific range of the monitored parameter(s) for each emission point;

(ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range indicates proper operation of the control device.

(A) If a performance test is required by this subpart for a control device, the range shall be based on the parameter values measured during the performance test and may be supplemented by engineering assessments and/or manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of permitted parameter values.

(B) If a performance test is not required by this subpart for a control device, the range may be based solely on engineering assessments and/or manufacturer's recommendations.

(iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.

(3) For emission points included in an emissions average, the Notification of Compliance Status shall include the values of all parameters needed for input to the emission credit and debit equations in § 63.150 (g) and (h), calculated or measured according to the procedures in § 63.150 (g) and (h) of this subpart, and the resulting calculation of credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified in § 63.100 of subpart F.

(4) If any emission point is subject to this subpart and to other standards as specified in § 63.110 of this subpart and if the provisions of § 63.110 of this subpart allow the owner or operator to choose which testing, monitoring, reporting, and recordkeeping provisions will be followed, then the Notification of Compliance Status shall indicate which rule's requirements will be followed for testing, monitoring, reporting, and recordkeeping.

(5) An owner or operator who transfers a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream for treatment pursuant to § 63.132(g) shall include in the Notification of Compliance Status the name and location of the transferee and a description of the Group 1 wastewater stream or residual sent to the treatment facility.

(c) The owner or operator of a source subject to this subpart shall submit Periodic Reports.

(1) Except as specified under paragraphs (c)(5) and (c)(6) of this section, a report containing the information in paragraphs (c)(2), (c)(3), and (c)(4) of this section shall be submitted semi-annually no later than 60 calendar days after the end of each 6-month period. The first report shall be submitted no later than 8 months after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due.

(2) Except as provided in paragraph (c)(2)(iv) of this section, for an owner or operator of a source complying with the provisions of §§ 63.113 through 63.147 for any emission points, Periodic Reports shall include all information specified in §§ 63.117 and 63.118 for process vents, § 63.122 for storage vessels, §§ 63.129 and 63.130 for transfer operations, and § 63.146 for process wastewater, including reports of periods when monitored parameters are outside their established ranges.

(i) For each parameter or parameters required to be monitored for a control device, the owner or operator shall establish a range of parameter values to ensure that the device is being applied, operated and maintained properly. As specified in paragraph (b)(2) of this section, these parameter values and the definition of an operating day shall be approved as part of and incorporated into the source's Notification of Compliance Status or operating permit, as appropriate.

(ii) The parameter monitoring data for Group 1 emission points and emission points included in emissions averages that are required to perform continuous monitoring shall be used to determine compliance with the required operating conditions for the monitored

control devices or recovery devices. For each excursion, except for excused excursions, the owner or operator shall be deemed to have failed to have applied the control in a manner that achieves the required operating conditions.

(A) An excursion means any of the three cases listed in paragraph (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section. For a control device or recovery device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section, this is considered a single excursion for the control device or recovery device.

(1) When the daily average value of one or more monitored parameters is outside the permitted range.

(2) When the period of control device or recovery device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.

(3) When the period of control device or recovery device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(4) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (c)(2)(ii)(A)(2) and (c)(2)(ii)(A)(3) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under § 63.151(g)(4), monitoring data are insufficient to calculate a valid hour of data if there are less than 4 data values recorded during the hour.

(B) The number of excused excursions for each control device or recovery device for each semiannual period is specified in paragraphs (c)(2)(ii)(B)(1) through (c)(2)(ii)(B)(6) of this section. This paragraph applies to sources required to submit Periodic Reports semiannually or quarterly. The first semiannual period is the 6-month period starting the date the Notification of Compliance Status is due.

(1) For the first semiannual period—six excused excursions.

(2) For the second semiannual period—five excused excursions.

(3) For the third semiannual period—four excused excursions.

(4) For the fourth semiannual period—three excused excursions.

(5) For the fifth semiannual period—two excused excursions.

(6) For the sixth and all subsequent semiannual periods—one excused excursion.

(C) If a monitored parameter is outside its established range or monitoring data are not collected during periods of start-up, shutdown, or malfunction (and the source is operated during such periods in accordance with the source's start-up, shutdown, and malfunction plan as required by § 63.6(e)(3) of subpart A of this part) or during periods of nonoperation of the chemical manufacturing process unit or portion thereof (resulting in cessation of the emissions to which the monitoring applies), then the excursion is not a violation and, in cases where continuous monitoring is required, the excursion does not count toward the number of excused excursions for determining compliance.

(D) Nothing in paragraph (c)(2)(ii) of this section shall be construed to allow or excuse a monitoring parameter excursion caused by any activity that violates other applicable provisions of subpart A, F, or G of this part.

(E) Paragraph (c)(2)(ii) of this section, except paragraph (c)(2)(ii)(C) of this section, shall apply only to emission points and control devices or recovery devices for which continuous monitoring is required by §§ 63.113 through 63.150.

(iii) Periodic Reports shall include the daily average values of monitored parameters for both excused and unexcused excursions, as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.

(iv) The provisions of paragraphs (c)(2), (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section do not apply to any storage vessel for which the owner or operator is not required, by the applicable monitoring plan established under § 63.120(d)(2), to keep continuous

records. If continuous records are required, the owner or operator shall specify, in the monitoring plan, whether the provisions of paragraphs (c)(2), (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section apply.

(3) If any performance tests are reported in a Periodic Report, the following information shall be included:

(i) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (b)(1)(ii) of this section.

(ii) For additional tests performed for the same kind of emission point using the same method, results and any other information required in § 63.117 for process vents, § 63.129 for transfer, and § 63.146 for process wastewater shall be submitted, but a complete test report is not required.

(4) Periodic Reports shall include the information in paragraphs (c)(4)(i) through (c)(4)(iv) of this section, as applicable:

(i) For process vents, reports of process changes as required under § 63.118 (g), (h), (i), and (j) of this subpart,

(ii) Any supplements required under § 63.151(i) and (j) of this subpart,

(iii) Notification if any Group 2 emission point becomes a Group 1 emission point, including a compliance schedule as required in § 63.100 of subpart F of this part, and

(iv) For process wastewater streams sent for treatment pursuant to § 63.132 (g), reports of changes in the identity of the treatment facility or transferee.

(5) The owner or operator of a source shall submit quarterly reports for all emission points included in an emissions average.

(i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status no later than 5 months after the compliance date specified in § 63.100 of subpart F.

(ii) The quarterly reports shall include the information specified in this paragraph for all emission points included in an emissions average.

(A) The credits and debits calculated each month during the quarter;

(B) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under § 63.150(e)(4) of this subpart.

(C) The values of any inputs to the credit and debit equations in § 63.150 (g) and (h) of this subpart that change from month to month during the quarter or that have changed since the previous quarter;

(D) Results of any performance tests conducted during the reporting period including one complete report for each test method used for a particular kind of emission point as described in paragraph (c)(3) of this section;

(E) Reports of daily average values of monitored parameters for both excused and unexcused excursions as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified.

(iii) Paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 and Group 2 points included in emissions averages. For storage vessels to which the provisions of paragraphs (c)(2)(i) through (c)(2)(iii) of this section do not apply (as specified in paragraph (c)(2)(iv) of this section), the owner or operator is required to comply with the provisions of the applicable monitoring plan, and monitoring records may be used to determine compliance.

(iv) Every fourth quarterly report shall include the following:

(A) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.150(e)(3) of this subpart; and

(B) A certification of compliance with all the emissions averaging provisions in § 63.150 of this subpart.

(6) The owner or operator of a source shall submit reports quarterly for particular emission points not included in an emissions average under the circumstances described in paragraphs (c)(6)(i) through (c)(6)(v) of this section.

(i) The owner or operator of a source subject to this subpart shall submit quarterly reports for a period of one year for an emission point that is not included in an emissions average if:

(A) The emission point has more excursions, as defined in paragraph (c)(2)(ii) of this section, than the number of excused excursions allowed under paragraph (c)(2)(ii)(B) of this section for a semiannual reporting period; and

(B) The Administrator requests the owner or operator to submit quarterly reports for the emission point.

(ii) The quarterly reports shall include all information in paragraphs (c)(2), (c)(3), and (c)(4) of this section applicable to the emission point(s) for which quarterly reporting is required under paragraph (c)(6)(i) of this section. Information applicable to other emission points within the source shall be submitted in the semiannual reports required under paragraph (c)(1) of this section.

(iii) Quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter.

(iv) After quarterly reports have been submitted for an emission point for one year, the owner or operator may return to semiannual reporting for the emission point unless the Administrator requests the owner or operator to continue to submit quarterly reports.

(v) Paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 emission points. For storage vessels to which the provisions of paragraphs (c)(2)(i) through (c)(2)(iii) of this section do not apply (as specified in paragraph (c)(2)(iv) of this section), the owner or operator is required to comply with the provisions of the applicable monitoring plan, and monitoring records may be used to determine compliance.

(d) Other reports shall be submitted as specified in subpart A of this part or in §§ 63.113 through 63.151 of this subpart. These reports are:

(1) Reports of start-up, shutdown, and malfunction required by § 63.10(d)(5) of subpart A. The semi-annual start-up, shutdown and malfunction reports may be submitted on the same schedule as the Periodic Reports required under paragraph (c) of this section instead of the schedule specified in § 63.10(d)(5)(i) of subpart A.

(2) For storage vessels, the notifications of inspections required by § 63.122 (h)(1) and (h)(2) of this subpart.

(3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.150(i) of this subpart.

(e) An owner or operator subject to this subpart shall submit the information specified in paragraphs (e)(1) through (e)(4) of this section with the operating permit application or as otherwise specified by the permitting authority. The owner or operator shall submit written updates as amendments to the operating permit application on the schedule and under the circumstances described in § 63.151(j) of this subpart. Notwithstanding, if the owner or operator has an operating permit under 40 CFR part 70 or 71, the owner or operator shall follow the schedule and format required by the permitting authority.

(1) The information specified in § 63.151 (f) or (g) of this subpart for any emission points for which the owner or operator requests approval to monitor a unique parameter or use an alternative monitoring and recording system, and

(2) The information specified in § 63.151(d) of this subpart for points included in an emissions average.

(3) The information specified in § 63.151(e) of this subpart for points not included in an emissions average.

(4) The information specified in § 63.151(h) as applicable.

(f) Owners or operators required to keep continuous records by §§ 63.118, 63.130, 63.147, 63.150, or other sections of this subpart shall keep records as specified in paragraphs (f)(1) through (f)(7) of this section, unless an alternative recordkeeping system has been requested and approved under § 63.151(f) or (g) or § 63.152(e) or under § 63.8(f) of subpart A of this part, and except as provided in paragraph (c)(2)(ii)(C) of this section or in paragraph (g) of this section. If a monitoring plan for storage vessels pursuant to § 63.120(d)(2)(i) requires continuous records, the monitoring plan shall specify which provisions, if any, of paragraphs (f)(1) through (f)(7) of this section apply.

(1) The monitoring system shall measure data values at least once every 15 minutes.

(2) The owner or operator shall record either:

(i) Each measured data value; or

(ii) Block average values for 15-minute or shorter periods calculated from all measured data values during each period or at least one measured data value per minute if measured more frequently than once per minute.

(3) If the daily average value of a monitored parameter for a given operating day is within the range established in the Notification of Compliance Status or operating permit, the owner or operator shall either:

(i) Retain block hourly average values for that operating day for 5 years and discard, at or after the end of that operating day, the 15-minute or more frequent average values and readings recorded under paragraph (f)(2) of this section; or

(ii) Retain the data recorded in paragraph (f)(2) of this section for 5 years.

(4) If the daily average value of a monitored parameter for a given operating day is outside the range established in the Notification of Compliance Status or operating permit, the owner or operator shall retain the data recorded that operating day under paragraph (f)(2) of this section for 5 years.

(5) Daily average values of each continuously monitored parameter shall be calculated for each operating day, and retained for 5 years, except as specified in paragraphs (f)(6) and (f)(7) of this section.

(i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.

(6) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status

or operating permit, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that operating day. For these operating days, the records required in paragraph (f)(3) of this section shall also be retained for 5 years.

(7) Monitoring data recorded during periods identified in paragraphs (f)(7)(i) through (f)(7)(v) of this section shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.

(i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments;

(ii) Start-ups;

(iii) Shutdowns;

(iv) Malfunctions;

(v) Periods of non-operation of the chemical manufacturing process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

(g) For any parameter with respect to any item of equipment, the owner or operator may implement the record-keeping requirements in paragraph (g)(1) or (g)(2) of this section as alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 63.114, 63.117, and 63.118 for process vents, §§ 63.127, 63.129, and 63.130 for transfer operations, §§ 63.143, 63.146, and 63.147 for wastewater, and/or § 63.152(f), except that § 63.152(f)(7) shall apply. The owner or operator shall retain each record required by paragraph (g)(1) or (g)(2) of this section as provided in § 63.103(c) of subpart F of this part, except as provided otherwise in paragraph (g)(1) or (g)(2) of this section.

(1) The owner or operator may retain only the daily average value, and is not required to retain more frequent monitored operating parameter values, for a monitored parameter with respect to an item of equipment, if the requirements of paragraphs (g)(1)(i) through (g)(1)(vi) of this section are met. An owner or operator electing to comply with the requirements of paragraph (g)(1) of this section shall notify the

Administrator in the Notification of Compliance Status or, if the Notification of Compliance Status has already been submitted, in the periodic report immediately preceding implementation of the requirements of paragraph (g)(1) of this section.

(i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation other than startups, shutdowns, or malfunctions (e.g., a temperature reading of -200°C on a boiler), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (g)(1)(ii)(A) through (g)(1)(iii)(C) of this section. All instances in an operating day constitute a single occurrence.

(A) The running average is above the maximum or below the minimum established limits;

(B) The running average is based on at least 6 1-hour average values; and

(C) The running average reflects a period of operation other than a startup, shutdown, or malfunction.

(iii) The monitoring system is capable of detecting unchanging data during periods of operation other than startups, shutdowns, or malfunctions, except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(iv) The monitoring system will alert the owner or operator by an alarm or

other means, if the running average parameter value calculated under paragraph (g)(1)(ii) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.

(v) The owner or operator shall verify the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (g)(1) of this section, at the times specified in paragraphs (g)(1)(v)(A) through (g)(1)(v)(C) of this section. The owner or operator shall document that the required verifications occurred.

(A) Upon initial installation.

(B) Annually after initial installation.

(C) After any change to the programming or equipment constituting the monitoring system, which might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.

(vi) The owner or operator shall retain the records identified in paragraphs (g)(1)(vi) (A) through (C) of this section.

(A) Identification of each parameter, for each item of equipment, for which the owner or operator has elected to comply with the requirements of paragraph (g) of this section.

(B) A description of the applicable monitoring system(s), and of how compliance will be achieved with each requirement of paragraph (g)(1)(i) through (g)(1)(v) of this section. The description shall identify the location and format (e.g., on-line storage; log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent superseded description. The description, and the most recent superseded description, shall be retained as provided in §63.103(c) of subpart F of this part, except as provided in paragraph (g)(1)(vi)(D) of this section.

(C) A description, and the date, of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (g)(1) of this section.

(D) Owners and operators subject to paragraph (g)(1)(vi)(B) of this section

shall retain the current description of the monitoring system as long as the description is current, but not less than 5 years from the date of its creation. The current description shall, at all times, be retained on-site or be accessible from a central location by computer or other means that provides access within 2 hours after a request. The owner or operator shall retain the most recent superseded description at least until 5 years from the date of its creation. The superseded description shall be retained on-site (or accessible from a central location by computer that provides access within 2 hours after a request) at least 6 months after its creation. Thereafter, the superseded description may be stored off-site.

(2) If an owner or operator has elected to implement the requirements of paragraph (g)(1) of this section, and a period of 6 consecutive months has passed without an excursion as defined in paragraph (g)(2)(iv) of this section, the owner or operator is no longer required to record the daily average value for that parameter for that unit of equipment, for any operating day when the daily average value is less than the maximum, or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months, if the parameter limit and the monitoring was required and/or approved by the Administrator.

(i) If the owner or operator elects not to retain the daily average values, the owner or operator shall notify the Administrator in the next periodic report. The notification shall identify the parameter and unit of equipment.

(ii) If, on any operating day after the owner or operator has ceased recording daily averages as provided in paragraph (g)(2) of this section, there is an excursion as defined in paragraph (g)(2)(iv) of this section, the owner or operator shall immediately resume retaining the daily average value for each day, and shall notify the Administrator in the next periodic report. The owner or operator shall continue to retain each daily average value until another period of 6 consecutive months has passed

without an excursion as defined in paragraph (g)(2)(iv) of this section.

(iii) The owner or operator shall retain the records specified in paragraphs (g)(1) (i), (ii), (iii), (iv), (v), and (vi) of this section. For any calendar week, if compliance with paragraphs (g)(1) (i), (ii), (iii), and (iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation other than a startup, shutdown, or malfunction.

(iv) For purposes of paragraph (g) of this section, an excursion means that the daily average value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value, except as pro-

vided in paragraphs (g)(2)(iv)(A) and (g)(2)(iv)(B) of this section.

(A) The daily average value during any start-up, shutdown, or malfunction shall not be considered an excursion for purposes of this paragraph (g)(2), if the owner or operator follows the applicable provisions of the startup, shutdown, and malfunction plan required by §63.6(e)(3) of subpart A of this part.

(B) An excused excursion, as described in §63.152(c)(2)(ii) (B) and (C), shall not be considered an excursion for purposes of this paragraph (g)(2).

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63629, Dec. 12, 1995; 61 FR 64577, Dec. 5, 1996; 62 FR 2776, Jan. 17, 1997]

APPENDIX TO SUBPART G—TABLES AND FIGURES

TABLE 1.—PROCESS VENTS—COEFFICIENTS FOR TOTAL RESOURCE EFFECTIVENESS FOR EXISTING SOURCE NONHALOGENATED AND HALOGENATED VENT STREAMS

Type of Stream	Control Device Basis	Values of Coefficients			
		a	b	c	d
Nonhalogenated	Flare	1.935	3.660×10^{-1}	-7.687×10^{-3}	-7.333×10^{-4}
	Thermal Incinerator 0 Percent Heat Recovery.	1.492	6.267×10^{-2}	3.177×10^{-2}	-1.159×10^{-3}
	Thermal Incinerator 70 Percent Heat Recovery.	2.519	1.183×10^{-2}	1.300×10^{-2}	4.790×10^{-2}
Halogenated	Thermal Incinerator and Scrubber.	3.995	5.200×10^{-2}	-1.769×10^{-3}	9.700×10^{-4}

TABLE 2.—PROCESS VENTS—COEFFICIENTS FOR TOTAL RESOURCE EFFECTIVENESS FOR NEW SOURCE NONHALOGENATED AND HALOGENATED VENT STREAMS

Type of stream	Control device basis	Values of Coefficients			
		a	b	c	d
Nonhalogenated	Flare	0.5276	0.0998	-2.096×10^{-3}	-2.000×10^{-4}
	Thermal Incinerator 0 Percent Heat Recovery.	0.4068	0.0171	8.664×10^{-3}	-3.162×10^{-4}
	Thermal Incinerator 70 Percent Heat Recovery.	0.6868	3.209×10^{-3}	3.546×10^{-3}	1.306×10^{-2}
Halogenated	Thermal Incinerator and Scrubber.	1.0895	1.417×10^{-2}	-4.822×10^{-4}	2.645×10^{-4}

TABLE 3.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAZARDOUS AIR POLLUTANTS EMISSIONS OR A LIMIT OF 20 Parts Per Million by Volume

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Thermal incinerator	Firebox temperature ^b [63.114(a)(1)(i)].	1. Continuous records. ^c 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS. ^d 3. Record the daily average firebox temperature for each operating day. ^e 4. Report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed [63.114(a)(1)(ii)].	1. Continuous records. 2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS. 3. Record the daily average upstream temperature and temperature difference across the catalyst bed for each operating day. ^e 4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR. 5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR. 6. Report all operating days when insufficient monitoring data are collected. ^f
Boiler or process heater with a design heat input capacity less than 44 megawatts and vent stream is <i>not</i> introduced with or as the primary fuel.	Firebox temperature ^b [63.114(a)(3)].	1. Continuous records. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS. 3. Record the daily average firebox temperature for each operating day. ^e 4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
Flare	Presence of a flame at the pilot light [63.114(a)(2)].	1. Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS. 3. Record the times and durations of all periods when all pilot flames are absent or the monitor is not operating. 4. Report the times and durations of all periods when all pilot flames of a flare are absent—PR.
Recapture devices	The appropriate monitoring device identified in table 4 when, in the table, the term "recapture" is substituted for "recovery." [63.114(a)(5)].	1. The recordkeeping and reporting requirements for monitored parameters identified for the appropriate monitoring device in table 4 of this subpart.
Scrubber for halogenated vent streams (Note: Controlled by a combustion device other than a flare).	pH of scrubber effluent [63.114(a)(4)(i)], and.	1. Continuous records. 2. Record and report the pH of the scrubber effluent averaged over the full period of the performance test—NCS. 3. Record the daily average pH of the scrubber effluent for each operating day. ^e 4. Report all daily average pH values of the scrubber effluent that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
Scrubber for halogenated vent streams (Note: Controlled by a combustion device other than a flare) (Continued).	Scrubber liquid and gas flow rates [63.114(a)(4)(ii)].	1. Continuous records of scrubber liquid flow rate. 2. Record and report the scrubber liquid/gas ratio averaged over the full period of the performance test—NCS. 3. Record the daily average scrubber liquid/gas ratio for each operating day. ^e 4. Report all daily average scrubber liquid/gas ratios that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.

TABLE 3.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAZARDOUS AIR POLLUTANTS EMISSIONS OR A LIMIT OF 20 Parts Per Million by Volume—Continued

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
All control devices	Presence of flow diverted to the atmosphere from the control device [63.114(d)(1)] or. Monthly inspections of sealed valves [63.114(d)(2)].	<ol style="list-style-type: none"> 1. Hourly records of whether the flow indicator was operating and whether diversion was detected at any time during each hour. 2. Record and report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR. 1. Records that monthly inspections were performed. 2. Record and report all monthly inspections that show the valves are moved to the diverting position or the seal has been changed—PR.

^aRegulatory citations are listed in brackets.

^bMonitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c"Continuous records" is defined in § 63.111 of this subpart.

^dNCS=Notification of Compliance Status described in § 63.152 of this subpart.

^eThe daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^fThe periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^gPR=Periodic Reports described in § 63.152 of this subpart.

TABLE 4.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR MAINTAINING A TRE INDEX VALUE >1.0 and ≤4.0

Final recovery device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Absorber ^b	Exit temperature of the absorbing liquid [63.114(b)(1)], and.	<ol style="list-style-type: none"> 1. Continuous records.^c 2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the TRE determination—NCS.^d 3. Record the daily average exit temperature of the absorbing liquid for each operating day.^e 4. Report all the daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit—PR.^f
	Exit specific gravity [63.114(b)(1)]	<ol style="list-style-type: none"> 1. Continuous records. 2. Record and report the exit specific gravity averaged over the full period of the TRE determination—NCS. 3. Record the daily average exit specific gravity for each operating day.^e 4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit—PR.
Condenser ^a	Exit (product side) temperature [63.114(b)(2)].	<ol style="list-style-type: none"> 1. Continuous records. 2. Record and report the exit temperature averaged over the full period of the TRE determination—NCS. 3. Record the daily average exit temperature for each operating day.^e 4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit—PR.
Carbon adsorber. ^d	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s) [63.114(b)(3)], and.	<ol style="list-style-type: none"> 1. Record of total regeneration stream mass flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass flow during each carbon bed regeneration cycle during the period of the TRE determination—NCS. 3. Report all carbon bed regeneration cycles when the total regeneration stream mass flow is outside the range established in the NCS or operating permit—PR.
	Temperature of the carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)] [63.114(b)(3)].	<ol style="list-style-type: none"> 1. Records of the temperature of the carbon bed after each regeneration. 2. Record and report the temperature of the carbon bed after each regeneration during the period of the TRE determination—NCS. 3. Report all carbon bed regeneration cycles during which temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit—PR.

TABLE 4.—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR MAINTAINING A TRE INDEX VALUE >1.0 and ≤4.0—Continued

Final recovery device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
All recovery devices (as an alternative to the above).	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device [63.114 (b)].	<ol style="list-style-type: none"> 1. Continuous records. 2. Record and report the concentration level or reading averaged over the full period of the TRE determination—NCS. 3. Record the daily average concentration level or reading for each operating day.^e 4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit—PR.

^aRegulatory citations are listed in brackets.^bAlternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under “All Recovery Devices.”^c“Continuous records” is defined in §63.111 of this subpart.^dNCS=Notification of Compliance Status described in §63.152 of this subpart.^eThe daily average is the average of all values recorded during the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.^fPR=Periodic Reports described in §63.152 of this subpart.

TABLE 5.—GROUP 1 STORAGE VESSELS AT EXISTING SOURCES

Vessel capacity (cubic meters)	Vapor Pressure ¹ (kilopascals)
75 ≤ capacity <151	≥13.1

TABLE 5.—GROUP 1 STORAGE VESSELS AT EXISTING SOURCES—Continued

Vessel capacity (cubic meters)	Vapor Pressure ¹ (kilopascals)
151 ≤ capacity	≥5.2

¹Maximum true vapor pressure of total organic HAP at storage temperature.

TABLE 6.—GROUP 1 STORAGE VESSELS AT NEW SOURCES

Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
38 ≤ capacity <151	≥13.1
151 ≤ capacity	≥0.7

^aMaximum true vapor pressure of total organic HAP at storage temperature.

TABLE 7.—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAZARDOUS AIR POLLUTANTS EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Thermal incinerator	Firebox temperature ^b [63.127(a)(1)(i)].	<ol style="list-style-type: none"> 1. Continuous records^c during loading. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS.^d 3. Record the daily average firebox temperature for each operating day.^e 4. Report daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected^f—PR.^g
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed [63.127(a)(1)(iii)].	<ol style="list-style-type: none"> 1. Continuous records during loading. 2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS. 3. Record the daily average upstream temperature and temperature difference across catalyst bed for each operating day.^e 4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR. 5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR. 6. Report all operating days when insufficient monitoring data are collected.^f

TABLE 7.—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAZARDOUS AIR POLLUTANTS EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Boiler or process heater with a design heat input capacity less than 44 megawatts and vent stream is <i>not</i> introduced with or as the primary fuel.	Firebox temperature ^b [63.127(a)(3)].	1. Continuous records during loading. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS. 3. Record the daily average firebox temperature for each operating day. ^c 4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient data are collected ^f —PR.
Flare	Presence of a flame at the pilot light [63.127(a)(2)].	1. Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS. 3. Record the times and durations of all periods when all pilot flames are absent or the monitor is not operating. 4. Report the duration of all periods when all pilot flames of a flare are absent—PR.
Scrubber for halogenated vent streams (Note: Controlled by a combustion device other than a flare).	pH of scrubber effluent [63.127(a)(4)(i)], and.	1. Continuous records during loading 2. Record and report the pH of the scrubber effluent averaged over the full period of the performance test—NCS 3. Record the daily average pH of the scrubber effluent for each operating day. ^c 4. Report all daily average pH values of the scrubber effluent that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
	Scrubber liquid and gas flow rates [63.127(a)(4)(ii)].	1. Continuous records during loading of scrubber liquid flow rate. 2. Record and report the scrubber liquid/gas ratio averaged over the full period of the performance test—NCS. 3. Record the daily average scrubber liquid/gas ratio for each operating day. ^c 4. Report all daily average scrubber liquid/gas ratios that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
Absorber ^h	Exit temperature of the absorbing liquid [63.127(b)(1)], and.	1. Continuous records during loading. 2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the performance test—NCS. 3. Record the daily average exit temperature of the absorbing liquid for each operating day. ^c 4. Report all daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
	Exit specific gravity [63.127(b)(1)]	1. Continuous records during loading. 2. Record and report the exit specific gravity averaged over the full period of the performance test—NCS. 3. Record the daily average exit specific gravity for each operating day. ^c 4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
Condenser ^h	Exit (product side) temperature [63.127(b)(2)].	1. Continuous records during loading. 2. Record and report the exit temperature averaged over the full period of the performance test—NCS. 3. Record the daily average exit temperature for each operating day. ^c 4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.

TABLE 7.—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAZARDOUS AIR POLLUTANTS EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Carbon adsorber ^b	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s) [63.127(b)(3)], and. Temperature of the carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)] [63.127(b)(3)].	1. Record of total regeneration stream mass flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass flow during each carbon bed regeneration cycle during the period of the performance test—NCS. 3. Report all carbon bed regeneration cycles when the total regeneration stream mass flow is outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^c —PR. 1. Records of the temperature of the carbon bed after each regeneration. 2. Record and report the temperature of the carbon bed after each regeneration during the period of the performance test—NCS. 3. Report all the carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^c —PR.
All recovery devices (as an alternative to the above).	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device [63.127(b)].	1. Continuous records during loading. 2. Record and report the concentration level or reading averaged over the full period of the performance test—NCS. 3. Record the daily average concentration level or reading for each operating day. ^d 4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^c —PR.
All control devices and vapor balancing systems.	Presence of flow diverted to the atmosphere from the control device [63.127(d)(1)] or. Monthly inspections of sealed valves [63.127(d)(2)].	1. Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour. 2. Record and report the duration of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR. 1. Records that monthly inspections were performed. 2. Record and report all monthly inspections that show the valves are moved to the diverting position or the seal has been changed.

^aRegulatory citations are listed in brackets.^bMonitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.^c"Continuous records" is defined in § 63.111 of this subpart.^dNCS = Notification of Compliance Status described in § 63.152 of this subpart.^eThe daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.^fThe periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.^gPR = Periodic Reports described in § 63.152 of this subpart.^hAlternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

TABLE 8.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW SOURCES

Chemical name	CAS No. ^a
Allyl chloride	107051
Benzene	71432
Butadiene (1,3-)	106990
Carbon disulfide	75150
Carbon tetrachloride	56235
Cumene	98828
Ethylbenzene	100414
Ethyl chloride (Chloroethane)	75003
Ethylidene dichloride (1,1-Dichloroethane).	75343
Hexachlorobutadiene	87683
Hexachloroethane	67721
Hexane	100543
Methyl bromide (Bromomethane)	74839

TABLE 8.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW SOURCES—Continued

Chemical name	CAS No. ^a
Methyl chloride (Chloromethane)	74873
Phosgene	75445
Tetrachloroethylene (Perchloroethylene)	127184
Toluene	108883
Trichloroethane (1,1,1-) (Methyl chloroform)	71556
Trichloroethylene	79016
Trimethylpentane (2,2,4-)	540841
Vinyl chloride (chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene).	75354
Xylene (m-)	108383

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TABLE 8.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW SOURCES—Continued

Chemical name	CAS No. ^a
Xylene (p-)	106423

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Note.—The list of organic HAP's on table 8 is a subset of the list of organic HAP's on table 9 of this subpart.

TABLE 9.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW AND EXISTING SOURCES AND CORRESPONDING FRACTION REMOVED (Fr) VALUES

Chemical name	CAS No. ^a	Fr
Acetaldehyde	75070	0.95
Acetonitrile	75058	0.62
Acetophenone	98862	0.72
Acrolein	107028	0.96
Acrylonitrile	107131	0.96
Allyl chloride	107051	0.99
Benzene	71432	0.99
Benzyl chloride	100447	0.99
Biphenyl	92524	0.99
Bromoform	75252	0.99
Butadiene (1,3-)	106990	0.99
Carbon disulfide	75150	0.99
Carbon tetrachloride	56235	0.99
Chlorobenzene	108907	0.99
Chloroform	67663	0.99
Chloroprene (2-Chloro-1,3-butadiene)	126998	0.99
Cumene	98828	0.99
Dichlorobenzene (p-)	106467	0.99
Dichloroethane (1,2-) (Ethylene dichloride)	107062	0.99
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444	0.87
Dichloropropene (1,3-)	542756	0.99
Diethyl sulfate	64675	0.90
Dimethyl sulfate	77781	0.53
Dimethylaniline (N,N-)	121697	0.99
Dimethylhydrazine (1,1-)	57147	0.57
Dinitrophenol (2,4-)	51285	0.99
Dinitrotoluene (2,4-)	121142	0.38
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911	0.37
Epichlorohydrin(1-Chloro-2,3-epoxypropane)	106898	0.91
Ethyl acrylate	140885	0.99
Ethylbenzene	100414	0.99
Ethyl chloride (Chloroethane)	75003	0.99
Ethylene dibromide (Dibromomethane)	106934	0.99
Ethylene glycol dimethyl ether	110714	0.90
Ethylene glycol monobutyl ether acetate	112072	0.76
Ethylene glycol monomethyl ether acetate	110496	0.28
Ethylene oxide	75218	0.98
Ethylidene dichloride (1,1-Dichloroethane)	75343	0.99
Hexachlorobenzene	118741	0.99
Hexachlorobutadiene	87683	0.99
Hexachloroethane	67721	0.99
Hexane	110543	0.99
Isophorone	78591	0.60
Methanol	67561	0.31
Methyl bromide (Bromomethane)	74839	0.99
Methyl chloride (Chloromethane)	74873	0.99
Methyl ethyl ketone (2-Butanone)	78933	0.95
Methyl isobutyl ketone (Hexone)	108101	0.99
Methyl methacrylate	80626	0.98
Methyl tert-butyl ether	1634044	0.99
Methylene chloride (Dichloromethane)	75092	0.99
Naphthalene	91203	0.99
Nitrobenzene	98953	0.80
Nitropropane (2-)	79469	0.98
Phosgene	75445	0.99
Propionaldehyde	123386	0.99
Propylene dichloride (1,2-Dichloropropane)	78875	0.99
Propylene oxide	75569	0.99
Styrene	100425	0.99

TABLE 9.—ORGANIC HAP'S SUBJECT TO THE WASTEWATER PROVISIONS FOR PROCESS UNITS AT NEW AND EXISTING SOURCES AND CORRESPONDING FRACTION REMOVED (FR) VALUES—Continued

Chemical name	CAS No. ^a	Fr
Tetrachloroethane (1,1,2,2-)	79345	0.99
Tetrachloroethylene (Perchloroethylene)	127184	0.99
Toluene	108883	0.99
Toluidine (o-)	95534	0.44
Trichlorobenzene (1,2,4-)	120821	0.99
Trichloroethane (1,1,1-) (Methyl chloroform)	71556	0.99
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005	0.99
Trichloroethylene	79016	0.99
Trichlorophenol (2,4,5-)	95954	0.96
Triethylamine	121448	0.99
Trimethylpentane (2,2,4-)	540841	0.99
Vinyl acetate	108054	0.99
Vinyl chloride (Chloroethylene)	75014	0.99
Vinylidene chloride (1,1-Dichloroethylene)	75354	0.99
Xylene (m-)	108383	0.99
Xylene (o-)	95476	0.99
Xylene (p-)	106423	0.99

^aCAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 10.—WASTEWATER—COMPLIANCE OPTIONS FOR WASTEWATER TANKS

Capacity (m ³)	Maximum true vapor pressure (kPa)	Control requirements
<75 .....	.....	§ 63.133(a)(1)
"75 and <151	<13.1	§ 63.133(a)(1)
.....	"13.1	§ 63.133(a)(2)
"151	<5.2	§ 63.133(a)(1)
.....	"5.2	§ 63.133(a)(2)

TABLE 11.—WASTEWATER—INSPECTION AND MONITORING REQUIREMENTS FOR WASTE MANAGEMENT UNITS

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
Tanks:			
63.133(b)(1)	Inspect fixed roof and all openings for leaks	Initially Semi-annually ..	Visual.
63.133(c)	Inspect floating roof in accordance with §§ 63.120 (a)(2) and (a)(3).	See § 63.120 (a)(2) and (a)(3).	Visual.
63.133(d)	Measure floating roof seal gaps in accordance with §§ 63.120 (b)(2)(i) through (b)(4). —Primary seal gaps	Once every 5 years Initially Annually.	See § 63.120 (b)(2)(i) through (b)(4).
63.133(f) 63.133(g)	—Secondary seal gaps .....	.....	.....
.....	Inspect wastewater tank for control equipment failures and improper work practices.	Initially Semi-annually ..	Visual.
Surface impoundments:			
63.134(b)(1)	Inspect cover and all openings for leaks	Initially Semi-annually ..	Visual.
63.134(c)	Inspect surface impoundment for control equipment failures and improper work practices.	Initially Semi-annually ..	Visual.
Containers:			
63.135(b)(1), 63.135(b)(2) (ii).	Inspect cover and all openings for leaks	Initially Semi-annually ..	Visual.
63.135(d)(1)	Inspect enclosure and all openings for leaks	Initially Semi-annually ..	Visual.
63.135(e)	Inspect container for control equipment failures and improper work practices.	Initially Semi-annually ..	Visual.
Individual Drain Systems^a:			
63.136(b)(1)	Inspect cover and all openings to ensure there are no gaps, cracks, or holes.	Initially Semi-annually ..	Visual.
63.136(c)	Inspect individual drain system for control equipment failures and improper work practices.	Initially Semi-annually ..	Visual.
63.136(e)(1)	Verify that sufficient water is present to properly maintain integrity of water seals.	Initially Semi-annually ..	Visual.
63.136(e)(2), 63.136(f)(1).	Inspect all drains using tightly-fitted caps or plugs to ensure caps and plugs are in place and properly installed.	Initially Semi-annually ..	Visual.

TABLE 11.—WASTEWATER—INSPECTION AND MONITORING REQUIREMENTS FOR WASTE MANAGEMENT UNITS—Continued

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
63.136(f)(2)	Inspect all junction boxes to ensure covers are in place and have no visible gaps, cracks, or holes.	Initially Semi-annually ..	Visual or smoke test or other means as specified.
63.136(f)(3)	Inspect unburied portion of all sewer lines for cracks and gaps.	Initially Semi-annually ..	Visual.
Oil-water separators:			
63.137(b)(1)	Inspect fixed roof and all openings for leaks	Initially Semi-annually ..	Visual.
63.137(c)	Measure floating roof seal gaps in accordance with 40 CFR 60.696(d)(1). —Primary seal gaps	Initially ^b	See 40 CFR 60.696(d)(1).
63.137(c)	—Secondary seal gaps	Once every 5 years. Initially ^b Annually.	
63.137(d)	Inspect oil-water separator for control equipment failures and improper work practices.	Initially Semi-annually ..	Visual.

^aAs specified in § 63.136(a), the owner or operator shall comply with either the requirements of § 63.136 (b) and (c) or § 63.136 and (f).

^bWithin 60 days of installation as specified in § 63.137(c).

TABLE 12.—MONITORING REQUIREMENTS FOR TREATMENT PROCESSES

To comply with	Parameters to be monitored	Frequency	Methods
1. Required mass removal of Table 8 and/or Table 9 compound(s) from wastewater treated in a properly operated biological treatment unit 63.138(f), 63.138(g).	Appropriate parameters as specified in § 63.143(c) and approved by permitting authority.	Appropriate frequency as specified in § 63.143 and as approved by permitting authority.	Appropriate methods as specified in § 63.143 and as approved by permitting authority.
2. Design steam stripper 63.138(d).	Steam flow rate	Continuously	Integrating steam flow monitoring device equipped with a continuous recorder.
	Wastewater feed mass flow rate	Continuously	Liquid flow meter installed at stripper influent and equipped with a continuous recorder.
	Wastewater feed temperature	Continuously	Liquid temperature monitoring device installed at stripper influent and equipped with a continuous recorder.
3. Alternative monitoring parameters.	Other parameters may be monitored upon approval from the Administrator in accordance with the requirements specified in § 63.151(f).	.	

TABLE 13.—WASTEWATER—MONITORING REQUIREMENTS FOR CONTROL DEVICES

Control Device	Monitoring equipment required	Parameters to be monitored	Frequency
All control devices	1. Flow indicator installed at all bypass lines to the atmosphere and equipped with continuous recorder ^b or. 2. Valves sealed closed with car-seal or lock-and-key configuration. Temperature monitoring device installed in firebox or in ductwork immediately downstream of firebox ^a and equipped with a continuous recorder ^b . Temperature monitoring device installed in gas stream immediately before and after catalyst bed and equipped with a continuous recorder ^b .	1. Presence of flow diverted from the control device to the atmosphere or. 2. Monthly inspections of sealed valves. Firebox temperature	Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour Monthly. Continuous.
Thermal Incinerator			
Catalytic Incinerator		1. Temperature upstream of catalyst bed or. 2. Temperature difference across catalyst bed.	Continuous.
Flare	Heat sensing device installed at the pilot light and equipped with a continuous recorder ^a .	Presence of a flame at the pilot light	Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour. Continuous.
Boiler or process heater <44 megawatts and vent stream is not mixed with the primary fuel. Condenser	Temperature monitoring device installed in firebox ^a and equipped with continuous recorder ^b .	Combustion temperature	Continuous.
Carbon adsorber (regenerative).	Temperature monitoring device installed at condenser exit and equipped with continuous recorder ^b . Integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent, and. Carbon bed temperature monitoring device	Condenser exit (product side) temperature. Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s). Temperature of carbon bed after regeneration (and within 15 minutes of completing any cooling cycle(s)). Organic compound concentration of adsorber exhaust.	Continuous. For each regeneration cycle, record the total regeneration stream mass or volumetric flow. For each regeneration cycle and within 15 minutes of completing any cooling cycle, record the carbon bed temperature. Daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.
Carbon adsorber (Non-regenerative). Alternative monitoring parameters.	Organic compound concentration monitoring device. ^c		
	Other parameters may be monitored upon approval from the Administrator in accordance with the requirements in §63.143(e)(3).		

^a Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^b "Continuous recorder" is defined in §63.111 of this subpart.

^c As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system.

TABLE 14–14b [RESERVED]

TABLE 15.—WASTEWATER—INFORMATION ON TABLE 8 AND/OR TABLE 9 COMPOUNDS TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS FOR PROCESS UNITS AT NEW AND/OR EXISTING SOURCES ^{a,b}

Process unit identification code ^c	Stream identification code	Concentration of table 8 and/or table 9 compound(s) (ppmw) ^{d,e}	Flow rate (lpm) ^{e,f}	Group 1 or Group 2 ^g	Compliance approach ^h	Treatment process(es) identification ⁱ	Waste management unit(s) identification	Intended control device

^aThe information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^bOther requirements for the NCS are specified in §63.152(b) of this subpart.

^cAlso include a description of the process unit (e.g., benzene process unit).

^dExcept when §63.132(e) is used, annual average concentration as specified in §63.132 (c) or (d) and §63.144.

^eWhen §63.132(e) is used, indicate the wastewater stream is a designated Group 1 wastewater stream.

^fExcept when §63.132(e) is used, annual average flow rate as specified in §63.132 (c) or (d) and in §63.144.

^gIndicate whether stream is Group 1 or Group 2. If Group 1, indicate whether it is Group 1 for Table 8 or Table 9 compounds or for both Table 8 and Table 9 compounds.

^hCite §63.138 compliance option used.

TABLE 16 [RESERVED]

TABLE 17.—INFORMATION FOR TREATMENT PROCESSES TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS ^{a,b}

Treatment process identification ^c	Description ^d	Wastewater stream(s) treated ^e	Monitoring parameters ^f
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^aThe information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^bOther requirements for the Notification of Compliance Status are specified in §63.152(b) of this Subpart.

^cIdentification codes should correspond to those listed in Table 15.

^dDescription of treatment process.

^eStream identification code for each wastewater stream treated by each treatment unit. Identification codes should correspond to entries listed in Table 15.

^fParameter(s) to be monitored or measured in accordance with Table 12 in §63.143 of this Subpart.

TABLE 18.—INFORMATION FOR WASTE MANAGEMENT UNITS TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS ^{a,b}

Waste management unit identification ^c	Description ^d	Wastewater stream(s) received or managed ^e

^aThe information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^bOther requirements for the Notification of Compliance Status are specified in §63.152(b) of this Subpart.

^cIdentification codes should correspond to those listed in Table 15.

^dDescription of waste management unit.

^eStream identification code for each wastewater stream received or managed by each waste management unit. Identification codes should correspond to entries listed in Table 15.

TABLE 19.—WASTEWATER—INFORMATION ON RESIDUALS TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS ^{a,b}

Residual identification ^c	Residual description ^d	Wastewater stream identification ^e	Treatment process ^f	Fate ^g	Control device identification code	Control device description ^h	Control device efficiency ⁱ
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TABLE 19.—WASTEWATER—INFORMATION ON RESIDUALS TO BE SUBMITTED WITH NOTIFICATION OF COMPLIANCE STATUS ^{a,b}—Continued

Residual identification ^c	Residual description ^d	Wastewater stream identification ^e	Treatment process ^f	Fate ^g	Control device identification code	Control device description ^h	Control device efficiency ⁱ
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^a The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^b Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this subpart.

^c Name or identification code of residual removed from Group 1 wastewater stream.

^d Description of residual (e.g., steam stripper A–13 overhead condensates).

^e Identification of stream from which residual is removed.

^f Treatment process from which residual originates.

^g Indicate whether residual is sold, returned to production process, or returned to waste management unit or treatment process; or whether HAP mass of residual is destroyed by 99 percent.

^h If the fate of the residual is such that the HAP mass is destroyed by 99 percent, give description of device used for HAP destruction.

ⁱ If the fate of the residual is such that the HAP mass is destroyed by 99 percent, provide an estimate of control device efficiency and attach substantiation in accordance with § 63.146(b)(9) of this subpart.

TABLE 20.—WASTEWATER—PERIODIC REPORTING REQUIREMENTS FOR CONTROL DEVICES USED TO COMPLY WITH § 63.133-63.138

Control device	Reporting requirements
Thermal incinerator	1. Report all daily average ^a temperatures that are outside the range established in the NCS ^b or operating permit and all operating days when insufficient monitoring data are collected. ^c
Catalytic incinerator	1. Report all daily average ^a upstream temperatures that are outside the range established in the NCS ^b or operating permit. 2. Report all daily average ^a temperature differences across the catalyst bed that are outside the range established in the NCS ^b or operating permit. 3. Report all operating days when insufficient monitoring data are collected. ^c
Boiler or process heater with a design heat input capacity less than 44 megawatts and vent stream is not mixed with the primary fuel.	1. Report all daily average ^a firebox temperatures that are outside the range established in the NCS ^b or operating permit and all operating days when insufficient monitoring data are collected. ^c
Flare	1. Report the duration of all periods when all pilot flames are absent.
Condenser	1. Report all daily average ^a exit temperatures that are outside the range established in the NCS ^b or operating permit and all operating days when insufficient monitoring data are collected. ^c
Carbon adsorber	1. Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is outside the range established in the NCS ^b or operating permit. 2. Report all carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration is outside the range established in the NCS ^b or operating permit. 3. Report all operating days when insufficient monitoring data are collected. ^c
All control devices	1. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating, or 2. Report all monthly inspections that show the valves are moved to the diverting position or the seal has been changed.

^a The daily average is the average of all values recorded during the operating day, as specified in § 63.147(d) of this subpart.

^b NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^c The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

TABLE 21.—AVERAGE STORAGE TEMPERATURE (Ts) AS A FUNCTION OF TANK PAINT COLOR

Tank Color	Average Storage Temperature (Ts)
White	T _A + 0
Aluminum	T _A + 2.5
Gray	T _A + 3.5

TABLE 21.—AVERAGE STORAGE TEMPERATURE (Ts) AS A FUNCTION OF TANK PAINT COLOR—Continued

Tank Color	Average Storage Temperature (Ts)
Black	T _A + 5.0

^a T_A is the average annual ambient temperature in degrees Fahrenheit.

TABLE 22.—PAINT FACTORS FOR FIXED ROOF TANKS

Tank color		Paint factors (Fp) Paint Condition	
Roof	Shell	Good	Poor
White	White	1.00	1.15
Aluminum (specular)	White	1.04	1.18
White	Aluminum (specular)	1.16	1.24
Aluminum (specular)	Aluminum (specular)	1.20	1.29
White	Aluminum (diffuse)	1.30	1.38
Aluminum (diffuse)	Aluminum (diffuse)	1.39	1.46
White	Gray	1.30	1.38
Light gray	Light gray	1.33	1.44
Medium gray	Medium gray	1.40	1.58

TABLE 23.—AVERAGE CLINGAGE FACTORS (C) ^a

Liquid	Shell condition		
	Light rust ^b	Dense rust	Gunitelined
Gasoline	0.0015	0.0075	0.15
Single component stocks	0.0015	0.0075	0.15
Crude oil	0.0060	0.030	0.60

^a Units for average clingage factors are barrels per 1,000 square feet.

^b If no specific information is available, these values can be assumed to represent the most common condition of tanks currently in use.

TABLE 24.—TYPICAL NUMBER OF COLUMNS AS A FUNCTION OF TANK DIAMETER FOR INTERNAL FLOATING ROOF TANKS WITH COLUMN SUPPORTED FIXED ROOFS ^a

Tank diameter range (D in feet)	Typical number of columns, (N _c)
0 < D ≤ 85	1
85 < D ≤ 100	6
100 < D ≤ 120	7
120 < D ≤ 135	8
135 < D ≤ 150	9
150 < D ≤ 170	16
170 < D ≤ 190	19
190 < D ≤ 220	22
220 < D ≤ 235	31
235 < D ≤ 270	37
270 < D ≤ 275	43
275 < D ≤ 290	49
290 < D ≤ 330	61
330 < D ≤ 360	71
360 < D ≤ 400	81

^a Data in this table should not supersede information on actual tanks.

TABLE 25.—EFFECTIVE COLUMN DIAMETER (F_c)

Column type	F _c (feet)
9-inch by 7-inch built-up columns	1.1
8-inch-diameter pipe columns	0.7
No construction details known	1.0

TABLE 26.—SEAL RELATED FACTORS FOR INTERNAL FLOATING ROOF VESSELS

Seal type	K _s	n
Liquid mounted resilient seal:		
Primary seal only	3.0	0
With rim-mounted secondary seal ^a	1.6	0
Vapor mounted resilient seal:		
Primary seal only	6.7	0
With rim-mounted secondary seal ^a	2.5	0

^a If vessel-specific information is not available about the secondary seal, assume only a primary seal is present.

Table 27.—SUMMARY OF INTERNAL FLOATING DECK FITTING LOSS FACTORS (K_F) AND TYPICAL NUMBER OF FITTINGS (N_F)

Deck fitting type	Deck fitting loss factor (K_F) ^a	Typical number of fittings (N_F)
Access hatch	1.	
Bolted cover, gasketed.	1.6	
Unbolted cover, gasketed.	11	
Unbolted cover, ungasketed.	^b 25	
Automatic gauge float well.	1.	
Bolted cover, gasketed.	5.1	
Unbolted cover, gasketed.	15	
Unbolted cover, ungasketed.	^b 28	
Column well	(see Table 24).	
Builtup column-sliding cover, gasketed.	33	
Builtup column-sliding cover, ungasketed.	^b 47	
Pipe column-flexible fabric sleeve seal.	10	
Pipe column-sliding cover, gasketed.	19	
Pipe column-sliding cover, ungasketed.	32	
Ladder well	1.	
Sliding cover, gasketed.	56	
Sliding cover, ungasketed.	^b 76	
Roof leg or hanger well.	(5+D/10+D ² /600) ^c .	
Adjustable	^b 7.9	
Fixed	0	
Sample pipe or well	1.	
Slotted pipe-sliding cover, gasketed.	44	

Table 27.—SUMMARY OF INTERNAL FLOATING DECK FITTING LOSS FACTORS (K_F) AND TYPICAL NUMBER OF FITTINGS (N_F)—Continued

Deck fitting type	Deck fitting loss factor (K_F) ^a	Typical number of fittings (N_F)
Slotted pipe-sliding cover, ungasketed.	57	
Sample well-slit fabric seal, 10 percent open area.	^b 12	
Stub drain, 1-in diameter ^d .	1.2	(D ² /125) ^c .
Vacuum breaker	1.	
Weighted mechanical actuation, gasketed.	^b 0.7	
Weighted mechanical actuation, ungasketed.	0.9	

^a Units for K_F are pound-moles per year.^b If no specific information is available, this value can be assumed to represent the most common/typical deck fittings currently used.^c D=Tank diameter (feet).^d Not used on welded contact internal floating decks.TABLE 28.—DECK SEAM LENGTH FACTORS^a (S_D) FOR INTERNAL FLOATING ROOF TANKS

Deck construction	Typical deck seam length factor
Continuous sheet construction ^b :	
5-foot wide sheets	0.2 ^c
6-foot wide sheets	0.17
7-foot wide sheets	0.14
Panel construction ^d :	
5 × 7.5 feet rectangular	0.33
5 × 12 feet rectangular	0.28

^a Deck seam loss applies to bolted decks only. Units for S_D are feet per square feet.^b $S_D=1/W$, where W = sheet width (feet).^c If no specific information is available, these factors can be assumed to represent the most common bolted decks currently in use.^d $S_D=(L+W)/LW$, where W = panel width (feet), and L = panel length (feet).

TABLE 29.—SEAL RELATED FACTORS FOR EXTERNAL FLOATING ROOF VESSELS

Seal type	Welded vessels		Riveted vessels	
	K_S	N	K_S	N
Metallic shoe seal:				
Primary seal only	1.2	1.5	1.3	1.5
With shoe-mounted secondary seal	0.8	1.2	1.4	1.2
With rim-mounted secondary seal	0.2	1.0	0.2	1.6
Liquid mounted resilient seal:				
Primary seal only	1.1	1.0	^a NA	NA
With weather shield	0.8	0.9	NA	NA
With rim-mounted secondary seal	0.7	0.4	NA	NA
Vapor mounted resilient seal:				
Primary seal only	1.2	2.3	NA	NA
With weather shield	0.9	2.2	NA	NA

TABLE 29.—SEAL RELATED FACTORS FOR EXTERNAL FLOATING ROOF VESSELS—Continued

Seal type	Welded ves-		Riveted ves-	
	K _S	N	K _S	N
With rim-mounted secondary seal	0.2	2.6	NA	NA

^a NA=Not applicable.TABLE 30.—ROOF FITTING LOSS FACTORS, K_{Fa}, K_{Fb}, AND M,^a AND TYPICAL NUMBER OF FITTINGS, N_T

Fitting type and construction details	Loss factors ^b			Typical number of fittings, N _T
	K _{Fa} (lb-mole/yr)	K _{Fb} (lb-mole/[mi/hr] ^m -yr)	m (dimensionless)	
Access hatch (24-in-diameter well)				1.
Bolted cover, gasketed	0	0	^c 0	
Unbolted cover, ungasketed	2.7	7.1	1.0	
Unbolted cover, gasketed	2.9	0.41	1.0	
Unslotted guide-pole well (8-in-diameter unslotted pole, 21-in-diameter well)				1.
Ungasketed sliding cover	0	67	^c 0.98	
Gasketed sliding cover	0	3.0	1.4	
Slotted guide-pole/sample well (8-in-diameter unslotted pole, 21-in-diameter well)				(^d).
Ungasketed sliding cover, without float	0	310	1.2	
Ungasketed sliding cover, with float	0	29	2.0	
Gasketed sliding cover, without float	0	260	1.2	
Gasketed sliding cover, with float	0	8.5	1.4	
Gauge-float well (20-inch diameter)				1.
Unbolted cover, ungasketed	2.3	5.9	^c 1.0	
Unbolted cover, gasketed	2.4	0.34	1.0	
Bolted cover, gasketed	0	0	0	
Gauge-hatch/sample well (8-inch diameter)				1.
Weighted mechanical actuation, gasketed ...	0.95	0.14	^c 1.0	
Weighted mechanical actuation, ungasketed	0.91	2.4	1.0	
Vacuum breaker (10-in-diameter well)				N _{F6} (Table 31).
Weighted mechanical actuation, gasketed ...	1.2	0.17	^c 1.0	
Weighted mechanical actuation, ungasketed	1.2	3.0	1.0	
Roof drain (3-in-diameter)				N _{F7} (Table 31).
Open	0	7.0	^c 1.4	
90 percent closed	0.51	0.81	1.0	N _{F8} (Table 32 ¹).
Roof leg (3-in-diameter)				N _{F8} (Table 32 ¹).
Adjustable, pontoon area	1.5	0.20	^c 1.0	
Adjustable, center area	0.25	0.067	^c 1.0	
Adjustable, double-deck roofs	0.25	0.067	1.0	
Fixed	0	0	0	
Roof leg (2½-in-diameter)				N _{F8} (Table 32 ¹).
Adjustable, pontoon area	1.7	0	0	
Adjustable, center area	0.41	0	0	
Adjustable, double-deck roofs	0.41	0	0	
Fixed	0	0	0	
Rim vent (6-in-diameter)				1 ^g .
Weighted mechanical actuation, gasketed ...	0.71	0.10	^c 1.0	
Weighted mechanical actuation, ungasketed	0.68	1.8	1.0	

^a The roof fitting loss factors, K_{Fa}, K_{Fb}, and m, may only be used for wind speeds from 2 to 15 miles per hour.^b Unit abbreviations are as follows: lb = pound; mi = miles; hr = hour; yr = year.^c If no specific information is available, this value can be assumed to represent the most common or typical roof fittings currently in use.^d A slotted guide-pole/sample well is an optional fitting and is not typically used.

^cRoof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs and are typically left open.

^dThe most common roof leg diameter is 3 inches. The loss factors for 2½-inch diameter roof legs are provided for use if this smaller size roof is used on a particular floating roof.

^eRim vents are used only with mechanical-shoe primary seals.

TABLE 31.—TYPICAL NUMBER OF VACUUM BREAKERS, N_{F6} AND ROOF DRAINS,^a N_{F7}

Tank diameter D (feet) ^b	No. of vacuum breakers, N_{F6}		No. of roof drains, N_{F7} double-deck roof ^c
	Pontoon roof	Double-deck roof	
50	1	1	1
100	1	1	1
150	2	2	2
200	3	2	3
250	4	3	5
300	5	3	7
350	6	4	d
400	7	4	d

^aThis table should not supersede information based on actual tank data.

^bIf the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

^cRoof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs, and are typically left open.

^dFor tanks more than 300 feet in diameter, actual tank data or the manufacturer's recommendations may be needed for the number of roof drains.

TABLE 32.—TYPICAL NUMBER OF ROOF LEGS,^a N_{F8}

Tank diameter D (feet) ^b	Pontoon roof		No. of legs on double-deck roof
	No. of pontoon legs	No. of center legs	
30	4	2	6
40	4	4	7
50	6	6	8
60	9	7	10
70	13	9	13
80	15	10	16
90	16	12	20

TABLE 32.—TYPICAL NUMBER OF ROOF LEGS,^a N_{F8} —Continued

Tank diameter D (feet) ^b	Pontoon roof		No. of legs on double-deck roof
	No. of pontoon legs	No. of center legs	
100	17	16	25
110	18	20	29
120	19	24	34
130	20	28	40
140	21	33	46
150	23	38	52
160	26	42	58
170	27	49	66
180	28	56	74
190	29	62	82
200	30	69	90
210	31	77	98
220	32	83	107
230	33	92	115
240	34	101	127
250	34	109	138
260	36	118	149
270	36	128	162
280	37	138	173
290	38	148	186
300	38	156	200
310	39	168	213
320	39	179	226
330	40	190	240
340	41	202	255
350	42	213	270
360	44	226	285
370	45	238	300
380	46	252	315
390	47	266	330
400	48	281	345

^aThis table should not supersede information based on actual tank data.

^bIf the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

TABLE 33.—SATURATION FACTORS

Cargo carrier	Mode of operation	S factor
Tank trucks and rail tank cars	Submerged loading of a clean cargo tank	0.50
	Submerged loading: dedicated normal service	0.60
	Submerged loading: dedicated vapor balance service	1.00
	Splash loading of a clean cargo tank	1.45
	Splash loading: dedicated normal service	1.45
	Splash loading: dedicated vapor balance service	1.00

TABLE 34. FRACTION MEASURED (F_m) AND FRACTION EMITTED (F_e) FOR HAP COMPOUNDS IN WASTEWATER STREAMS

Chemical name	CAS Number ^a	F_m	F_e
Acetaldehyde	75070	1.00	0.48
Acetonitrile	75058	0.99	0.36
Acetophenone	98862	0.31	0.14
Acrolein	107028	1.00	0.43
Acrylonitrile	107131	1.00	0.43
Allyl chloride	107051	1.00	0.89

TABLE 34. FRACTION MEASURED (F_m) AND FRACTION EMITTED (F_e) FOR HAP COMPOUNDS IN WASTEWATER STREAMS—Continued

Chemical name	CAS Number ^a	F_m	F_e
Benzene	71432	1.00	0.80
Benzyl chloride	100447	1.00	0.47
Biphenyl	92524	0.86	0.45
Bromoform	75252	1.00	0.49
Butadiene (1,3-)	106990	1.00	0.98
Carbon disulfide	75150	1.00	0.92
Carbon tetrachloride	56235	1.00	0.94
Chlorobenzene	108907	1.00	0.73
Chloroform	67663	1.00	0.78
Chloroprene (2-Chloro-1,3-butadiene)	126998	1.00	0.68
Cumene	98828	1.00	0.88
Dichlorobenzene (p-)	106467	1.00	0.72
Dichloroethane (1,2-) (Ethylene dichloride)	107062	1.00	0.64
Dichloroethyl ether (Bis(2-Chloroethyl ether))	111444	0.76	0.21
Dichloropropene (1,3-)	542756	1.00	0.76
Diethyl sulfate	64675	0.0025	0.11
Dimethyl sulfate	77781	0.086	0.079
Dimethylaniline (N,N-)	121697	0.00080	0.34
Dimethylhydrazine (1,1-)	57147	0.38	0.054
Dinitrophenol (2,4-)	51285	0.0077	0.060
Dinitrotoluene (2,4-)	121142	0.085	0.18
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911	0.87	0.18
Epichlorohydrin(1-Chloro-2,3-epoxypropane)	106898	0.94	0.35
Ethyl acrylate	140885	1.00	0.48
Ethylbenzene	100414	1.00	0.83
Ethyl chloride (Chloroethane)	75003	1.00	0.90
Ethylene dibromide (Dibromomethane)	106934	1.00	0.57
Ethylene glycol dimethyl ether	110714	0.86	0.32
Ethylene glycol monobutyl ether acetate	112072	0.043	0.067
Ethylene glycol monomethyl ether acetate	110496	0.093	0.048
Ethylene oxide	75218	1.00	0.50
Ethylidene dichloride (1,1-Dichloroethane)	75343	1.00	0.79
Hexachlorobenzene	118741	0.97	0.64
Hexachlorobutadiene	87683	0.88	0.86
Hexachloroethane	67721	0.50	0.85
Hexane	110543	1.00	1.00
Isophorone	78591	0.51	0.11
Methanol	67561	0.85	0.17
Methyl bromide (Bromomethane)	74839	1.00	0.85
Methyl chloride (Chloromethane)	74873	1.00	0.84
Methyl ethyl ketone (2-Butanone)	78933	0.99	0.48
Methyl isobutyl ketone (Hexone)	108101	0.98	0.53
Methyl methacrylate	80626	1.00	0.37
Methyl tert-butyl ether	1634044	1.00	0.57
Methylene chloride (Dichloromethane)	75092	1.00	0.77
Naphthalene	91203	0.99	0.51
Nitrobenzene	98953	0.39	0.23
Nitropropane (2-)	79469	0.99	0.44
Phosgene	75445	1.00	0.87
Propionaldehyde	123386	1.00	0.41
Propylene dichloride (1,2-Dichloropropane)	78875	1.00	0.72
Propylene oxide	75569	1.00	0.60
Styrene	100425	1.00	0.80
Tetrachloroethane (1,1,2,2-)	79345	1.00	0.46
Tetrachloroethylene (Perchloroethylene)	127184	1.00	0.92
Toluene	108883	1.00	0.80
Toluidine (o-)	95534	0.15	0.052
Trichlorobenzene (1,2,4-)	120821	1.00	0.64
Trichloroethane (1,1,1-) (Methyl chloroform)	71556	1.00	0.91
Trichloroethane (1,1,2-) (Vinyl Trichloride)	79005	1.00	0.60
Trichloroethylene	79016	1.00	0.87
Trichlorophenol (2,4,5-)	95954	0.11	0.086
Triethylamine	121448	1.00	0.38
Trimethylpentane (2,2,4-)	540841	1.00	1.00
Vinyl acetate	108054	1.00	0.59
Vinyl chloride (Chloroethylene)	75014	1.00	0.97
Vinylidene chloride (1,1-Dichloroethylene)	75354	1.00	0.94
Xylene (m-)	108383	1.00	0.82
Xylene (o-)	95476	1.00	0.79

TABLE 34. FRACTION MEASURED (F_m) AND FRACTION EMITTED (F_e) FOR HAP COMPOUNDS IN WASTEWATER STREAMS—Continued

Chemical name	CAS Number ^a	F_m	F_e
Xylene (p-)	106423	1.00	0.82

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 35.—CONTROL REQUIREMENTS FOR ITEMS OF EQUIPMENT THAT MEET THE CRITERIA OF § 63.149 OF SUBPART G

Item of equipment	Control requirement ^a
Drain or drain hub	(a) Tightly fitting solid cover (TFSC); or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) Water seal with submerged discharge or barrier to protect discharge from wind.
Manhole ^b	(a) TFSC; or (b) TSFC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) If the item is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter.
Lift station	(a) TFSC; or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) If the lift station is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter. The lift station shall be level controlled to minimize changes in the liquid level.
Trench	(a) TFSC; or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) If the item is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter.
Pipe	Each pipe shall have no visible gaps in joints, seals, or other emission interfaces.
Oil/Water separator	(a) Equip with a fixed roof and route vapors to a process or to a fuel gas system, or equip with a closed vent system that routes vapors to a control device meeting the requirements of § 63.139(c); or (b) Equip with a floating roof that meets the equipment specifications of § 60.693 (a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4).
Tank ^c	Maintain a fixed roof. ^d If the tank is sparged ^e or used for heating or treating by means of an exothermic reaction, a fixed roof and a system shall be maintained that routes the organic hazardous air pollutants vapors to other process equipment or a fuel gas system, or a closed vent system that routes vapors to a control device that meets the requirements of 40 CFR § 63.119 (e)(1) or (e)(2).

^a Where a tightly fitting solid cover is required, it shall be maintained with no visible gaps or openings, except during periods of sampling, inspection, or maintenance.

^b Manhole includes sumps and other points of access to a conveyance system.

^c Applies to tanks with capacities of 38 m³ or greater.

^d A fixed roof may have openings necessary for proper venting of the tank, such as pressure/vacuum vent, j-pipe vent.

^e The liquid in the tank is agitated by injecting compressed air or gas.

TABLE 36.—COMPOUND LISTS USED FOR COMPLIANCE DEMONSTRATIONS FOR ENHANCED BIOLOGICAL TREATMENT PROCESSES (SEE § 63.145(b))

List 1	List 2	List 3
Acetonitrile	Acetaldehyde	Allyl Chloride.
Acetophenone	Acrolein	Bromomethane.
Acrylonitrile	Benzene	Butadiene 1,3.
Biphenyl	Benzyl Chloride	Carbon Disulfide.
Chlorobenzene	Bromoform	Carbon Tetrachloride.
Dichloroethyl Ether	Cumene (isopropylbenzene)	Chloroethane (ethyl chloride).
Diethyl Sulfate	Dichlorobenzene 1,4	Chloroform.
Dimethyl Sulfate	Dichloroethane 1,2	Chloroprene.
Dimethyl Hydrazine 1,1	Dichloroethane 1,1 (ethylenedichloride)	Dibromoethane 1,2.
Dinitrophenol 2,4	Dichloropropane 1,2	Dichloroethene 1,1 (vinylidene chloride).
Dinitrotoluene 2,4	Dimethylaniline N,N	Dichloropropene 1,3.
Dioxane 1,4	Epichlorohydrin	Hexane-n.
Ethylene Glycol Monobutyl Ether Acetate	Ethyl Acrylate	Methyl Chloride.

TABLE 36.—COMPOUND LISTS USED FOR COMPLIANCE DEMONSTRATIONS FOR ENHANCED BIOLOGICAL TREATMENT PROCESSES (SEE § 63.145(b))—Continued

List 1	List 2	List 3
Ethylene Glycol Monomethyl Ether Acetate.	Ethylbenzene	Methylene Chloride (dichloromethane).
Ethylene Glycol Dimethyl Ether	Ethylene Dibromide	Phosgene.
Hexachlorobenzene	Ethylene Oxide	Propylene Oxide.
Isophorone	Hexachlorobutadiene	Trichloroethane 1,1,2.
Methanol	Hexachloroethane	Trichloroethylene.
Methyl Methacrylate	Methyl Ethyl Ketone, (2 butanone)	Trimethylpentane 2,2,4.
Nitrobenzene	Methyl Isobutyl Ketone	Vinyl Chloride.
Toluidine	Methyl Tertiary Butyl Ether	
Trichlorobenzene 1,2,4	Naphthalene	
Trichlorophenol 2,4,6	Nitropropane 2	
Triethylamine	Propionaldehyde	
	Styrene.	
	Tetrachloroethane 1,1,2,2.	
	Toluene.	
	Trichloroethane 1,1,1 (methyl chloroform).	
	Vinyl Acetate	
	Xylene-m	
	Xylene-o	
	Xylene-p	

TABLE 37.—DEFAULT BIORATES FOR LIST 1 COMPOUNDS

Compound name	Biorate, K1 L/g MLVSS-hr
Acetonitrile	0.100
Acetophenone	0.538
Acrylonitrile	0.750
Biphenyl	5.643
Chlorobenzene	10.000
Dichloroethyl ether	0.246
Diethyl sulfate	0.105
Dimethyl hydrazine(1,1)	0.227
Dimethyl sulfate	0.178
Dinitrophenol 2,4	0.620
Dinitrotoluene(2,4)	0.784
Dioxane(1,4)	0.393
Ethylene glycol dimethyl ether	0.364
Ethylene glycol monomethyl ether acetate	0.159
Ethylene glycol monobutyl ether acetate	0.496
Hexachlorobenzene	16.179
Isophorone	0.598
Methanol	0.200
Methyl methacrylate	4.300
Nitrobenzene	2.300
Toluidine (-O)	0.859
Trichlorobenzene 1,2,4	4.393
Trichlorophenol 2,4,5	4.477
Triethylamine	1.064

FIGURE 1.—DEFINITIONS OF TERMS USED IN WASTEWATER EQUATIONS

Main Terms

AMR=Actual mass removal of Table 8 and/or Table 9 compounds achieved by treatment process or a series of treatment processes, kg/hr.

C=Concentration of Table 8 and/or Table 9 compounds in wastewater, ppmw.

CG=Concentration of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, dry basis, ppmv.

CG_c=Concentration of TOC or organic hazardous air pollutants corrected to 3-percent oxygen, in vented gas stream, dry basis, ppmv.

CGS=Concentration of sample compounds in vented gas stream, dry basis, ppmv.

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E=Removal or destruction efficiency, percent.

F_{bio}=Site-specific fraction of Table 8 and/or Table 9 compounds bio-degraded, unitless.

f_{bio}=Site-specific fraction of an individual Table 8 or Table 9 compound bio-degraded, unitless.

F_m=Compound-specific fraction measured factor, unitless (listed in table 34).

Fr=Fraction removal value for Table 8 and/or Table 9 compounds, unitless (listed in Table 9).

Fr_{avg}=Flow-weighted average of the Fr values.

i=Identifier for a compound.

j=Identifier for a sample.

k=Identifier for a run.

K₂=Constant, $41.57 \cdot 10^{-9}$, (ppm)⁻¹ (gram-mole per standard m³) (kg/g), where standard temperature (gram-mole per standard m³) is 20 °C.

m=Number of samples.

M=Mass, kg.

MW=Molecular weight, kg/kg-mole.

n=Number of compounds.

p=Number of runs.

%O_{2d}=Concentration of oxygen, dry basis, percent by volume.

Q=Volumetric flowrate of wastewater, m³/hr.

QG=Volumetric flow rate of vented gas stream, dry standard, m³/min.

QMG=Mass flowrate of TOC (minus methane and ethane) or organic hazardous air pollutants, in vented gas stream, kg/hr.

QMW=Mass flowrate of Table 8 and/or Table 9 compounds in wastewater, kg/hr.

ρ=Density, kg/m³.

RMR=Required mass removal achieved by treatment process or a series of treatment processes, kg/hr.

t_r=Total time of all runs, hr.

Subscripts

a=Entering.

b=Exiting.

i=Identifier for a compound.

j=Identifier for a sample.

k=Identifier for a run.

m=Number of samples.

n=Number of compounds.

p=Number of runs.

T=Total; sum of individual.

[59 FR 19468, Apr. 22, 1994, as amended at 59 FR 29201, June 6, 1994; 61 FR 63629–63630, Dec. 12, 1995; 62 FR 2779, Jan. 17, 1997]

Subpart H—National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

SOURCE: 59 FR 19568, Apr. 22, 1994, unless otherwise noted.

§ 63.160 Applicability and designation of source.

(a) The provisions of this subpart apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or systems required by this subpart that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR part 63 that references this subpart.

(b) After the compliance date for a process unit, equipment to which this subpart applies that are also subject to the provisions of:

(1) 40 CFR part 60 will be required to comply only with the provisions of this subpart.

(2) 40 CFR part 61 will be required to comply only with the provisions of this subpart.

(c) If a process unit subject to the provisions of this subpart has equipment to which this subpart does not apply, but which is subject to a standard identified in paragraph (c)(1), (c)(2), or (c)(3) of this section, the owner or operator may elect to apply this subpart to all such equipment in the process unit. If the owner or operator elects this method of compliance, all VOC in such equipment shall be considered, for purposes of applicability and compliance with this subpart, as if it were organic hazardous air pollutant (HAP). Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with the standard

identified in paragraph (c)(1), (c)(2), or (c)(3) of this section.

(1) 40 CFR part 60, subpart VV, GGG, or KKK; (2) 40 CFR part 61, subpart F or J; or (3) 40 CFR part 264, subpart BB or 40 CFR part 265, subpart BB.

(2) [Reserved]

(d) The provisions in § 63.1(a)(3) of subpart A of this part do not alter the provisions in paragraph (b) of this section.

(e) Except as provided in any subpart that references this subpart, lines and equipment not containing process fluids are not subject to the provisions of this subpart. Utilities, and other non-process lines, such as heating and cooling systems which do not combine their materials with those in the processes they serve, are not considered to be part of a process unit.

(f) The provisions of this subpart do not apply to research and development facilities or to bench-scale batch processes, regardless of whether the facilities or processes are located at the same plant site as a process subject to the provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 59 FR 53360, Oct. 24, 1994; 60 FR 18029, Apr. 10, 1995; 61 FR 31439, June 20, 1996]

§ 63.161 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in this section as follows, except as provided in any subpart that references this subpart.

Batch process means a process in which the equipment is fed intermittently or discontinuously. Processing then occurs in this equipment after which the equipment is generally emptied. Examples of industries that use batch processes include pharmaceutical production and pesticide production.

Batch product-process equipment train means the collection of equipment (e.g., connectors, reactors, valves, pumps, etc.) configured to produce a specific product or intermediate by a batch process.

Bench-scale batch process means a batch process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory

bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Bottoms receiver means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

Closed-loop system means an enclosed system that returns process fluid to the process and is not vented to the atmosphere except through a closed-vent system.

Closed-purge system means a system or combination of system and portable containers, to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

Closed-vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back into a process.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic hazardous air pollutant emissions.

Compliance date means the dates specified in § 63.100(k) or § 63.100(l)(3) of subpart F of this part for process units subject to subpart F of this part; the dates specified in § 63.190(e) of subpart I of this part for process units subject to subpart I of this part. For sources subject to other subparts in 40 CFR part 63 that reference this subpart, compliance date will be defined in those subparts. However, the compliance date for § 63.170 shall be no later than 3 years after the effective date of those subparts unless otherwise specified in such other subparts.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined

fittings that are not inaccessible, glass, or glass-lined as described in §63.174(h) of this subpart.

Control device means any equipment used for recovering, recapturing, or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, flares, boilers, and process heaters.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant service; and any control devices or systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in §63.180(b) and (c), as appropriate, to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards, such as ANSI B31-3.

In food/medical service means that a piece of equipment in organic hazardous air pollutant service contacts a process stream used to manufacture a Food and Drug Administration regulated product where leakage of a barrier fluid into the process stream would cause any of the following:

(1) A dilution of product quality so that the product would not meet written specifications,

(2) An exothermic reaction which is a safety hazard,

(3) The intended reaction to be slowed down or stopped, or

(4) An undesired side reaction to occur.

In gas/vapor service means that a piece of equipment in organic hazardous air pollutant service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service or in light liquid service.

In light liquid service means that a piece of equipment in organic hazardous air pollutant service contains a liquid that meets the following conditions:

(1) The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20 °C,

(2) The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream, and

(3) The fluid is a liquid at operating conditions.

NOTE: Vapor pressures may be determined by the methods described in 40 CFR 60.485(e)(1).

In liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service.

In organic hazardous air pollutant or in organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of §63.180(d) of this subpart. The provisions of §63.180(d) of this subpart also specify how to determine that a piece of equipment is not in organic HAP service.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

In volatile organic compound or in VOC service means, for the purposes of this subpart, that:

(1) The piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (see 40 CFR 60.2 for the definition of VOC, and 40 CFR 60.485(d) to determine whether a piece of equipment is not in VOC service); and

(2) The piece of equipment is not in heavy liquid service as defined in 40 CFR 60.481.

In-situ sampling systems means non-extractive samplers or in-line samplers.

Initial start-up means the first time a new or reconstructed source begins production. Initial start-up does not include operation solely for testing equipment. Initial start-up does not include subsequent start-ups (as defined in this section) of process units following malfunctions or process unit shutdowns.

Instrumentation system means a group of equipment components used to condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 0.5 inches and smaller, and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 0.5 inches and connectors greater than nominally 0.75 inches associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

Liquids dripping means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquid dripping include puddling or new stains that are indicative of an existing evaporated drip.

Nonrepairable means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process unit shutdown.

On-site or On site means, with respect to records required to be maintained by this subpart, that the records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the chemical manufacturing process unit to which the records pertain, or storage in central files elsewhere at the major source.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Polymerizing monomer means a molecule or compound usually containing carbon and of relatively low molecular weight and simple structure (e.g., hydrogen cyanide, acrylonitrile, styrene), which is capable of conversion to polymers, synthetic resins, or elastomers by combination with itself due to heat generation caused by a pump mechanical seal surface, contamination by a seal fluid (e.g., organic peroxides or chemicals that will form organic peroxides), or a combination of both with the resultant polymer buildup causing rapid mechanical seal failure.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.

Pressure relief device or valve means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated

either by a pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices.

Process unit means a chemical manufacturing process unit as defined in subpart F of this part, a process subject to the provisions of subpart I of this part, or a process subject to another subpart in 40 CFR part 63 that references this subpart.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown, is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. Recapture devices include, but are not limited to, absorbers, carbon absorbers, and condensers.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use or reuse. Recovery devices include, but are not limited to, absorbers, carbon absorbers, and condensers. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

Repaired means that equipment:

(1) Is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this subpart, and

(2) Unless otherwise specified in applicable provisions of this subpart, is monitored as specified in § 63.180 (b) and (c), as appropriate, to verify that emissions from the equipment are below the applicable leak definition.

Routed to a process or route to a process means the emissions are conveyed by hard-piping or a closed vent system to any enclosed portion of a process unit where the emissions are predominately recycled and/or consumed in the same manner as a material that fulfills the same function in the process; and/or transformed by chemical reaction into materials that are not organic hazardous air pollutants; and/or incorporated into a product; and/or recovered.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

Screwed connector means a threaded pipe fitting where the threads are cut on the pipe wall and the fitting requires only two pieces to make the connection (i.e., the pipe and the fitting).

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Set pressure means the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

Start-up means the setting in operation of a piece of equipment or a control device that is subject to this subpart.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a process unit (as defined in the specific subpart that references this subpart) when in-process storage, mixing, or management of flow rates or

volumes is needed to assist in production of a product.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 60 FR 18024, 18029, Apr. 10, 1995; 61 FR 31439, June 20, 1996; 62 FR 2788, Jan. 17, 1997]

§ 63.162 Standards: General.

(a) Compliance with this subpart will be determined by review of the records required by § 63.181 of this subpart and the reports required by § 63.182 of this subpart, review of performance test results, and by inspections.

(b)(1) An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.174 of this subpart as provided in § 63.177.

(2) If the Administrator makes a determination that a means of emission limitation is a permissible alternative to the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.174 of this subpart, the owner or operator shall comply with the alternative.

(c) Each piece of equipment in a process unit to which this subpart applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.

(d) Equipment that is in vacuum service is excluded from the requirements of this subpart.

(e) Equipment that is in organic HAP service less than 300 hours per calendar year is excluded from the requirements of §§ 63.163 through 63.174 of this subpart and § 63.178 of this subpart if it is identified as required in § 63.181(j) of this subpart.

(f) When each leak is detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored as specified in §§ 63.168(f)(3), and 63.175(e)(7)(i)(D) of this subpart, and no leak has been detected during the follow-up monitoring. If the owner or operator elects to comply using the provisions of § 63.174(c)(1)(i) of this subpart, the identification on a connector may be removed after it is monitored as specified in § 63.174(c)(1)(i) and no leak is detected during that monitoring.

(3) The identification which has been placed on equipment determined to have a leak, except for a valve or for a connector that is subject to the provisions of § 63.174(c)(1)(i), may be removed after it is repaired.

(g) Except as provided in paragraph (g)(1) of this section, all terms in this subpart that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), refer to the standard calendar periods unless specified otherwise in the section or subsection that imposes the requirement.

(1) If the initial compliance date does not coincide with the beginning of the standard calendar period, an owner or operator may elect to utilize a period beginning on the compliance date, or may elect to comply in accordance with the provisions of paragraphs (g)(2) or (g)(3) of this section.

(2) Time periods specified in this subpart for completion of required tasks may be changed by mutual agreement between the owner or operator and the Administrator, as specified in subpart A of this part. For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.

(3) Except as provided in paragraph (g)(1) or (g)(2) of this section, where the period specified for compliance is a standard calendar period, if the initial compliance date does not coincide with the beginning of the calendar period, compliance shall be required according to the schedule specified in paragraphs (g)(3)(i) or (g)(3)(ii) of this section, as appropriate.

(i) Compliance shall be required before the end of the standard calendar period within which the compliance

deadline occurs, if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or

(ii) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.

(4) In all instances where a provision of this subpart requires completion of a task during each of multiple successive periods, an owner or operator may perform the required task at any time during each period, provided the task is conducted at a reasonable interval after completion of the task during the previous period.

(h) In all cases where the provisions of this subpart require an owner or operator to repair leaks by a specified time after the leak is detected, it is a violation of this subpart to fail to take action to repair the leaks within the specified time. If action is taken to repair the leaks within the specified time, failure of that action to successfully repair the leak is not a violation of this subpart. However, if the repairs are unsuccessful, a leak is detected and the owner or operator shall take further action as required by applicable provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 62 FR 2789, Jan. 17, 1997]

§ 63.163 Standards: Pumps in light liquid service.

(a) The provisions of this section apply to each pump that is in light liquid service.

(1) The provisions are to be implemented on the dates specified in the specific subpart in 40 CFR part 63 that references this subpart in the phases specified below:

(i) For each group of existing process units at existing sources subject to the provisions of subparts F or I of this part, the phases of the standard are:

(A) Phase I, beginning on the compliance date;

(B) Phase II, beginning no later than 1 year after the compliance date; and

(C) Phase III, beginning no later than 2½ years after the compliance date.

(ii) For new sources subject to the provisions of subparts F or I of this part, the applicable phases of the standard are:

(A) After initial start-up, comply with the Phase II requirements; and

(B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.

(2) The owner or operator of a source subject to the provisions of subparts F or I of this part may elect to meet the requirements of a later phase during the time period specified for an earlier phase.

(3) Sources subject to other subparts in 40 CFR part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(b)(1) The owner or operator of a process unit subject to this subpart shall monitor each pump monthly to detect leaks by the method specified in § 63.180(b) of this subpart and shall comply with the requirements of paragraphs (a) through (d) of this section, except as provided in § 63.162(b) of this subpart and paragraphs (e) through (i) of this section.

(2) The instrument reading, as determined by the method as specified in § 63.180(b) of this subpart, that defines a leak in each phase of the standard is:

(i) For Phase I, an instrument reading of 10,000 parts per million or greater.

(ii) For Phase II, an instrument reading of 5,000 parts per million or greater.

(iii) For Phase III, an instrument reading of:

(A) 5,000 parts per million or greater for pumps handling polymerizing monomers;

(B) 2,000 parts per million or greater for pumps in food/medical service; and

(C) 1,000 parts per million or greater for all other pumps.

(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it

is detected, except as provided in paragraph (c)(3) of this section or § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:

- (i) Tightening of packing gland nuts.
- (ii) Ensuring that the seal flush is operating at design pressure and temperature.

(3) For pumps in Phase III to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.

(d)(1) The owner or operator shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.

(2) If, in Phase III, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the owner or operator shall implement a quality improvement program for pumps that complies with the requirements of § 63.176 of this subpart.

(3) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = ((P_L - P_S) / (P_T - P_S)) \times 100$$

where:

$\%P_L$ = Percent leaking pumps

P_L = Number of pumps found leaking as determined through monthly monitoring as required in paragraphs (b)(1) and (b)(2) of this section.

P_T = Total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section.

P_S = Number of pumps leaking within 1 month of start-up during the current monitoring period.

(e) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) through (d) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

- (i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
- (ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or
- (iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(2) The barrier fluid is not in light liquid service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(i) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in § 63.180(b) of this subpart to determine if there is a leak of organic HAP in the barrier fluid.

(ii) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (e)(3) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(6)(i) of this section, or if, based on the criteria established in paragraph (e)(6)(i) of this section, the sensor indicates failure of

the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(f) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of paragraphs (a) through (c) of this section.

(g) Any pump equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of § 63.172 of this subpart is exempt from the requirements of paragraphs (b) through (e) of this section.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(4) of this section, and the daily requirements of paragraph (e)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

(i) If more than 90 percent of the pumps at a process unit meet the criteria in either paragraph (e) or (f) of this section, the process unit is exempt from the requirements of paragraph (d) of this section.

(j) Any pump that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor pump is exempt from the requirements of paragraphs (b) through (e) of this section if:

(1) The owner or operator of the pump determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than

the periodic monitoring schedule otherwise applicable.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31439, June 20, 1996; 62 FR 2789, Jan. 17, 1997]

§ 63.164 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to the atmosphere, except as provided in § 63.162(b) of this subpart and paragraphs (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or

(3) Equipped with a closed-loop system that purges the barrier fluid directly into a process stream.

(c) The barrier fluid shall not be in light liquid service.

(d) Each barrier fluid system as described in paragraphs (a) through (c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) through (f) of this section if it is equipped with a closed-vent system to capture and transport leakage from the compressor drive shaft seal back to a process or a fuel gas system or to a control device that complies with the requirements of § 63.172 of this subpart.

(i) Any compressor that is designated, as described in § 63.181(b)(2)(ii) of this subpart, to operate with an instrument reading of less than 500 parts per million above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:

(1) Is demonstrated to be operating with an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.180(c) of this subpart; and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 62 FR 2790, Jan. 17, 1997]

§ 63.165 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in paragraph (b) of this section, as measured by the method specified in § 63.180(c) of this subpart.

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 63.171 of this subpart.

(2) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indi-

cated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.180(c) of this subpart.

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in § 63.172 of this subpart is exempt from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 63.171 of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 62 FR 2790, Jan. 17, 1997]

§ 63.166 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in § 63.162(b) of this subpart. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of § 63.172 of this subpart; or

(4) Collect, store, and transport the purged process fluid to a system or facility identified in paragraph (b)(4)(i), (ii), or (iii) of this section.

(i) A waste management unit as defined in § 63.111 of subpart G of this

part, if the waste management unit is subject to, and operated in compliance with the provisions of subpart G of this part applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of subpart G of part 63, the waste management unit need not be subject to, and operated in compliance with the requirements of 40 CFR part 63, subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility.

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) *In-situ* sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31439, June 20, 1996]

§ 63.167 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 63.162(b) of this subpart and paragraphs (d) and (e) of this section.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the

event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or, would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraph (a) through (c) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31440, June 20, 1996]

§ 63.168 Standards: Valves in gas/vapor service and in light liquid service.

(a) The provisions of this section apply to valves that are either in gas service or in light liquid service.

(1) The provisions are to be implemented on the dates set forth in the specific subpart in 40 CFR part 63 that references this subpart as specified in paragraph (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section.

(i) For each group of existing process units at existing sources subject to the provisions of subpart F or I of this part, the phases of the standard are:

(A) Phase I, beginning on the compliance date;

(B) Phase II, beginning no later than 1 year after the compliance date; and

(C) Phase III, beginning no later than 2½ years after the compliance date.

(ii) For new sources subject to the provisions of subpart F or I of this part, the applicable phases of the standard are:

(A) After initial start-up, comply with the Phase II requirements; and

(B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.

(iii) Sources subject to other subparts in 40 CFR part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(2) The owner or operator of a source subject to this subpart may elect to meet the requirements of a later phase during the time period specified for an earlier phase.

(3) The use of monitoring data generated before April 22, 1994 to qualify

for less frequent monitoring is governed by the provisions of § 63.180(b)(6) of this subpart.

(b) The owner or operator of a source subject to this subpart shall monitor all valves, except as provided in § 63.162(b) of this subpart and paragraphs (h) and (i) of this section, at the intervals specified in paragraphs (c) and (d) of this section and shall comply with all other provisions of this section, except as provided in § 63.171, § 63.177, § 63.178, and § 63.179 of this subpart.

(1) The valves shall be monitored to detect leaks by the method specified in § 63.180(b) of this subpart.

(2) The instrument reading that defines a leak in each phase of the standard is:

(i) For Phase I, an instrument reading of 10,000 parts per million or greater.

(ii) For Phase II, an instrument reading of 500 parts per million or greater.

(iii) For Phase III, an instrument reading of 500 parts per million or greater.

(c) In Phases I and II, each valve shall be monitored quarterly.

(d) In Phase III, the owner or operator shall monitor valves for leaks at the intervals specified below:

(1) At process units with 2 percent or greater leaking valves, calculated according to paragraph (e) of this section, the owner or operator shall either:

(i) Monitor each valve once per month; or

(ii) Within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of § 63.175 (d) or (e) of this subpart and monitor quarterly.

(2) At process units with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) and (d)(4) of this section.

(3) At process units with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 quarters.

(4) At process units with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every 4 quarters.

(e)(1) Percent leaking valves at a process unit shall be determined by the following equation:

$$\%V_L = (V_L / (V_T + V_C)) \times 100$$

where:

$\%V_L$ = Percent leaking valves as determined through periodic monitoring required in paragraphs (b) through (d) of this section.

V_L = Number of valves found leaking excluding nonrepairables as provided in paragraph (e)(3)(i) of this section.

V_T = Total valves monitored, in a monitoring period excluding valves monitored as required by (f)(3) of this section.

V_C = Optional credit for removed valves = $0.67 \times$ net number (i.e., total removed – total added) of valves in organic HAP service removed from process unit after the date set forth in § 63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then $V_C = 0$.

(2) For use in determining monitoring frequency, as specified in paragraph (d) of this section, the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.

(3)(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (e)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in

organic HAP service shall be included in the calculation of percent leaking valves.

(f)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair.

(i) The monitoring shall be conducted as specified in § 63.180 (b) and (c), as appropriate, to determine whether the valve has resumed leaking.

(ii) Periodic monitoring required by paragraphs (b) through (d) of this section may be used to satisfy the requirements of this paragraph (f)(3), if the timing of the monitoring period coincides with the time specified in this paragraph (f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of this paragraph (f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this paragraph (f)(3).

(iii) If a leak is detected by monitoring that is conducted pursuant to paragraph (f)(3) of this section, the owner or operator shall follow the provisions of paragraphs (f)(3)(iii)(A) and (f)(3)(iii)(B) of this section, to determine whether that valve must be counted as a leaking valve for purposes of § 63.168(e) of this subpart.

(A) If the owner or operator elected to use periodic monitoring required by paragraphs (b) through (d) of this section to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve.

(B) If the owner or operator elected to use other monitoring, prior to the periodic monitoring required by paragraphs (b) through (d) of this section, to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.

(g) First attempts at repair include, but are not limited to, the following practices where practicable:

- (1) Tightening of bonnet bolts,
- (2) Replacement of bonnet bolts,
- (3) Tightening of packing gland nuts, and
- (4) Injection of lubricant into lubricated packing.

(h) Any valve that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) through (f) of this section if:

(1) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and

(2) The owner or operator of the valve has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

(i) Any valve that is designated, as described in § 63.181(b)(7)(ii) of this subpart, as a difficult-to-monitor valve is exempt from the requirements of paragraphs (b) through (d) of this section if:

(1) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the valve is located is an existing source or the owner or operator designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

(j) Any equipment located at a plant site with fewer than 250 valves in organic HAP service is exempt from the requirements for monthly monitoring and a quality improvement program specified in paragraph (d)(1) of this section. Instead, the owner or operator shall monitor each valve in organic HAP service for leaks once each quarter, or comply with paragraph (d)(3) or

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(d)(4) of this section except as provided in paragraphs (h) and (i) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2790, Jan. 17, 1997]

§ 63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service.

(a) Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in § 63.180(b) of this subpart if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in paragraphs (c) and (d) of this section, it is not necessary to monitor the system for leaks by the method specified in § 63.180(b) of this subpart.

(b) If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for pumps in food/medical service or pumps subject to § 63.163(b)(iii)(C), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) For equipment identified in paragraph (a) of this section that is not monitored by the method specified in § 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

(d) First attempts at repair include, but are not limited to, the practices de-

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scribed under §§ 63.163(c)(2) and 63.168(g) of this subpart, for pumps and valves, respectively.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 60 FR 18029, Apr. 10, 1995; 62 FR 2790, Jan. 17, 1997]

§ 63.170 Standards: Surge control vessels and bottoms receivers.

Each surge control vessel or bottoms receiver that is not routed back to the process and that meets the conditions specified in table 2 or table 3 of this subpart shall be equipped with a closed-vent system that routes the organic vapors vented from the surge control vessel or bottoms receiver back to the process or to a control device that complies with the requirements in § 63.172 of this subpart, except as provided in § 63.162(b) of this subpart, or comply with the requirements of § 63.119(b) or (c) of subpart G of this part.

[60 FR 18024, Apr. 10, 1995]

§ 63.171 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

(b) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

(c) Delay of repair for valves, connectors, and agitators is also allowed if:

(1) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 63.172 of this subpart.

(d) Delay of repair for pumps is also allowed if:

(1) Repair requires replacing the existing seal design with a new system that the owner or operator has determined under the provisions of § 63.176(d)

of this subpart will provide better performance or:

(i) A dual mechanical seal system that meets the requirements of § 63.163(e) of this subpart,

(ii) A pump that meets the requirements of § 63.163(f) of this subpart, or

(iii) A closed-vent system and control device that meets the requirements of § 63.163(g) of this subpart; and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994]

§ 63.172 Standards: Closed-vent systems and control devices.

(a) Owners or operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in § 63.162(b) of this subpart.

(b) Recovery or recapture devices (e.g., condensers and absorbers) shall be designed and operated to recover the organic hazardous air pollutant emissions or volatile organic compounds emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to the provisions of § 63.179.

(c) Enclosed combustion devices shall be designed and operated to reduce the organic hazardous air pollutant emissions or volatile organic compounds emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent, or to provide a mini-

mum residence time of 0.50 seconds at a minimum temperature of 760 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of § 63.11(b) of subpart A of this part.

(e) Owners or operators of control devices that are used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their design.

NOTE: The intent of this provision is to ensure proper operation and maintenance of the control device.

(f) Except as provided in paragraphs (k) and (l) of this section, each closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the closed-vent system is constructed of hard-piping, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed-vent system is constructed of duct work, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and

(ii) Conduct annual inspections according to the procedures in paragraph (g) of this section.

(g) Each closed-vent system shall be inspected according to the procedures in § 63.180(b) of this subpart.

(h) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (i) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (i) of this section.

(i) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process

unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(j) For each closed-vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (j)(1) or (j)(2) of this section, except as provided in paragraph (j)(3) of this section.

(1) Install, set or adjust, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3) of subpart G of this part. The flow indicator shall be installed at the entrance to any bypass line; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line.

(3) Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(k) Any parts of the closed-vent system that are designated, as described in paragraph 63.181(b)(7)(i), as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (f)(1) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times, but not more frequently than annually.

(l) Any parts of the closed-vent system that are designated, as described in § 63.181 (b)(7)(i) of this subpart, as

difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.

(m) Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of this subpart, such system or control device shall be operating.

(n) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any control device subject to this subpart that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR part 264, subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR part 265, subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of this subpart, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of this subpart. The owner or operator shall identify which option has been chosen, in the next periodic report required by § 63.182(d).

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2790, Jan. 17, 1997]

§ 63.173 Standards: Agitators in gas/vapor service and in light liquid service.

(a)(1) Each agitator shall be monitored monthly to detect leaks by the methods specified in § 63.180(b) of this subpart, except as provided in § 63.162(b) of this subpart.

(2) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(b)(1) Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.

(2) If there are indications of liquids dripping from the agitator, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (d)(6) of this section are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the agitator stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or

(iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(2) The barrier fluid is not in light liquid organic HAP service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each agitator is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.

(i) If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the agitator shall be monitored as specified in § 63.180(b) of this subpart to determine the presence of organic HAP in the barrier fluid.

(ii) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (d)(3) of this section is observed daily or is equipped with an alarm unless the agitator is located within the boundary of an unmanned plant site.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the agitator seal exceed the criteria established in paragraph (d)(6)(i) of this section, or if, based on the criteria established in paragraph (d)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from paragraphs (a) through (c) of this section.

(f) Any agitator equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or fuel gas system or to a control device that complies with the requirements of § 63.172 of this subpart is exempt from the requirements of paragraphs (a) through (c) of the section.

(g) Any agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(1) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each agitator is visually inspected as often as practical and at least monthly.

(h) Any agitator that is difficult-to-monitor is exempt from the requirements of paragraphs (a) through (d) of this section if:

(1) The owner or operator determines that the agitator cannot be monitored without elevating the monitoring personnel more than two meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the agitator is located is an existing source

or the owner or operator designates less than three percent of the total number of agitators in a new source as difficult-to-monitor; and

(3) The owner or operator follows a written plan that requires monitoring of the agitator at least once per calendar year.

(i) Any agitator that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from the monitoring requirements of paragraphs (a) through (d) of this section.

(j) Any agitator that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor agitator is exempt from the requirements of paragraphs (b) through (d) of this section if:

(1) The owner or operator of the agitator determines that the agitator is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) through (d) of this section; and

(2) The owner or operator of the agitator has a written plan that requires monitoring of the agitator as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31440, June 20, 1996; 62 FR 2791, Jan. 17, 1997]

§ 63.174 Standards: Connectors in gas/vapor service and in light liquid service.

(a) The owner or operator of a process unit subject to this subpart shall monitor all connectors in gas/vapor and light liquid service, except as provided in § 63.162(b) of this subpart, and in paragraphs (f) through (h) of this section, at the intervals specified in paragraph (b) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in § 63.180(b) of this subpart.

(2) If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

(b) The owner or operator shall monitor for leaks at the intervals specified in either paragraph (b)(1) or (b)(2) of

this section and in paragraph (b)(3) of this section.

(1) For each group of existing process units within an existing source, by no later than 12 months after the compliance date, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

(2) For new sources, within the first 12 months after initial start-up or by no later than 12 months after the date of promulgation of a specific subpart that references this subpart, whichever is later, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

(3) After conducting the initial survey required in paragraph (b)(1) or (b)(2) of this section, the owner or operator shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section, except as provided in paragraph (c)(2) of this section:

(i) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period.

(ii) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. An owner or operator may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period.

(iii) If the owner or operator of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the owner or operator may monitor the connectors one time every 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years.

(iv) If a process unit complying with the requirements of paragraph (b) of

this section using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the owner or operator shall increase the monitoring frequency to one time every 2 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.

(v) If a process unit complying with requirements of paragraph (b)(3)(iii) of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the owner or operator shall increase the monitoring frequency to one time per year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.

(4) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of § 63.180(b)(6).

(c)(1)(i) Except as provided in paragraph (c)(1)(ii) of this section, each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section, unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of paragraph (i)(2) of this section.

(ii) As an alternative to the requirements in paragraph (c)(1)(i) of this section, an owner or operator may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the owner or operator may not count nonrepairable connectors for the purposes of paragraph (i)(2) of this section. The owner or operator shall calculate the percent leaking connectors for the monitoring periods described in paragraph (b) of this

section, by setting the nonrepairable component, C_{AN} , in the equation in paragraph (i)(2) of this section to zero for all monitoring periods.

(iii) An owner or operator may switch alternatives described in paragraphs (c)(1) (i) and (ii) of this section at the end of the current monitoring period he is in, provided that it is reported as required in § 63.182 of this subpart and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch.

(2) As an alternative to the requirements of paragraph (b)(3) of this section, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before the dates specified in paragraph (c)(2)(iii) or (c)(2)(iv) of this section may:

(i) Comply with the requirements of § 63.169 of this subpart, and

(ii) Be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutants service after having been opened or otherwise had the seal broken. If that monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section.

(iii) For sources subject to subparts F and I of this part, the provisions of paragraph (c)(2) of this section apply to screwed connectors installed before December 31, 1992.

(iv) For sources not identified in paragraph (c)(2)(iii) of this section, the provisions of paragraph (c)(2) of this section apply to screwed connectors installed before the date of proposal of the applicable subpart of this part that references this subpart.

(d) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in paragraph (g) of this section and in § 63.171 of this subpart. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(e) [Reserved]

(f) Any connector that is designated, as described in § 63.181(b)(7)(i) of this

subpart, as an unsafe-to-monitor connector is exempt from the requirements of paragraph (a) of this section if:

(1) The owner or operator determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with paragraphs (a) through (e) of this section; and

(2) The owner or operator has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable.

(g) Any connector that is designated, as described in § 63.181(b)(7)(iii) of this subpart, as an unsafe-to-repair connector is exempt from the requirements of paragraphs (a), (d), and (e) of this section if:

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraph (d) of this section; and

(2) The connector will be repaired before the end of the next scheduled process unit shutdown.

(h)(1) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (c) of this section and from the recordkeeping and reporting requirements of § 63.181 and § 63.182 of this subpart. An inaccessible connector is one that is:

(i) Buried;

(ii) Insulated in a manner that prevents access to the connector by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground;

(v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold; or

(vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is

not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) If any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 63.171 of this subpart and paragraph (g) of this section.

(3) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(i) For use in determining the monitoring frequency, as specified in paragraph (b) of this section, the percent leaking connectors shall be calculated as specified in paragraphs (i)(1) and (i)(2) of this section.

(1) For the first monitoring period, use the following equation:

$$\% C_L = C_L / (C_t + C_C) \times 100$$

where:

% C_L = Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b) of this section.

C_L = Number of connectors measured at 500 parts per million or greater, by the method specified in § 63.180(b) of this subpart.

C_t = Total number of monitored connectors in the process unit.

C_C = Optional credit for removed connectors = 0.67 × net (i.e., total removed—total added) number of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C = 0.

(2) For subsequent monitoring periods, use the following equation:

$$\% C_L = [(C_L - C_{AN}) / (C_t + C_C)] \times 100$$

where:

% C_L = Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b) of this section.

C_L = Number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in §63.180(b) of this subpart.

C_{AN} = Number of allowable nonrepairable connectors, as determined by monitoring required in paragraphs (b)(3) and (c) of this section, not to exceed 2 percent of the total connector population, C_t .

C_t = Total number of monitored connectors, including nonrepairables, in the process unit.

C_C = Optional credit for removed connectors = $0.67 \times \text{net number (i.e., total removed—total added) of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then } C_C = 0.$

(j) Optional credit for removed connectors. If an owner or operator eliminates a connector subject to monitoring under paragraph (b) of this section, the owner or operator may receive credit for elimination of the connector, as described in paragraph (i) of this section, provided the requirements in paragraphs (j)(1) through (j)(4) are met.

(1) The connector was welded after the date of proposal of the specific subpart that references this subpart.

(2) The integrity of the weld is demonstrated by monitoring it according to the procedures in §63.180(b) of this subpart or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.

(3) Welds created after the date of proposal but before the date of promulgation of a specific subpart that references this subpart are monitored or tested by 3 months after the compliance date specified in the applicable subpart.

(4) Welds created after promulgation of the subpart that references this subpart are monitored or tested within 3 months after being welded.

(5) If an inadequate weld is found or the connector is not welded completely around the circumference, the connector is not considered a welded connector and is therefore not exempt from the provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2791, Jan. 17, 1997]

§63.175 Quality improvement program for valves.

(a) In Phase III, an owner or operator may elect to comply with one of the alternative quality improvement programs specified in paragraphs (d) and (e) of this section. The decision to use one of these alternative provisions to comply with the requirements of §63.168(d)(1)(ii) of this subpart must be made during the first year of Phase III for existing process units and for new process units.

(b) An owner or operator of a process unit subject to the requirements of paragraph (d) or (e) of this section shall comply with those requirements until the process unit has fewer than 2 percent leaking valves, calculated as a rolling average of 2 consecutive quarters, as specified in §63.168(e) of this subpart.

(c) After the process unit has fewer than 2 percent leaking valves, the owner or operator may elect to comply with the requirements in §63.168 of this subpart, to continue to comply with the requirements in paragraph (e) (or (d), if appropriate) of this section, or comply with both the requirements in §63.168 and §63.175.

(1) If the owner or operator elects to continue the quality improvement program, the owner or operator is exempt from the requirements for performance trials as specified in paragraph (e)(6) of this section, or further progress as specified in paragraph (d)(4) of this section, as long as the process unit has fewer than 2 percent leaking valves calculated according to §63.168(e).

(2) If the owner or operator elects to comply with both paragraph (e) of this section and §63.168 of this subpart, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in §63.168 (d)(2), (d)(3), and (d)(4) of this subpart.

(3) If the owner or operator elects not to continue the quality improvement program, the program is no longer an option if the process unit again exceeds 2 percent leaking valves, and in such case, monthly monitoring will be required.

(d) The following requirements shall be met if an owner or operator elects to use a quality improvement program to demonstrate further progress:

(1) The owner or operator shall continue to comply with the requirements in § 63.168 of this subpart except each valve shall be monitored quarterly.

(2) The owner or operator shall collect the following data, and maintain records as required in § 63.181(h)(1) of this subpart, for each valve in each process unit subject to the quality improvement program:

(i) The maximum instrument reading observed in each monitoring observation before repair, the response factor for the stream if appropriate, the instrument model number, and date of the observation.

(ii) Whether the valve is in gas or light liquid service.

(iii) If a leak is detected, the repair methods used and the instrument readings after repair.

(3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.

(4) The owner or operator must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of paragraph (d) of this section, except as provided in paragraphs (d)(4)(ii) and (d)(4)(iii) of this section.

(i) Demonstration of progress shall mean that for each quarter there is at least a 10-percent reduction in the percent leaking valves from the percent leaking valves determined for the preceding monitoring period. The percent leaking valves shall be calculated as a rolling average of two consecutive quarters of monitoring data. The percent reduction shall be calculated using the rolling average percent leaking valves, according to the following:

$$\%LV_R = (\%LV_{AVG1} - \%LV_{AVG2}) / \%LV_{AVG1} \times 100$$

where:

$\%LV_R$ = Percent leaking valve reduction.

$\%LV_{AVG1} = (\%V_{Li} + \%V_{Li+1})/2$.

$\%LV_{AVG2} = (\%V_{Li+1} + \%V_{Li+2})/2$.

where:

$\%V_{Li}$, $\%V_{Li+1}$, $\%V_{Li+2}$

are percent leaking valves calculated for subsequent monitoring periods, i, i+1, i+2.

(ii) An owner or operator who fails for two consecutive rolling averages to demonstrate at least a 10-percent reduction per quarter in percent leaking valves, and whose overall average percent reduction based on two or more rolling averages is less than 10 percent per quarter, shall either comply with the requirements in § 63.168(d)(1)(i) of this subpart using monthly monitoring or shall comply using a quality improvement program for technology review as specified in paragraph (e) of this section. If the owner or operator elects to comply with the requirements of paragraph (e) of this section, the schedule for performance trials and valve replacements remains as specified in paragraph (e) of this section.

(iii) As an alternative to the provisions in paragraph (d)(4)(i), an owner or operator may use the procedure specified in paragraphs (d)(4)(iii)(A) and (d)(4)(iii)(B) of this section to demonstrate progress in reducing the percent leaking valves.

(A) The percent reduction that must be achieved each quarter shall be calculated as follows:

$$\%RR = \frac{\%V_L - 2\%}{0.10}$$

$\%RR$ = percent reduction required each quarter, as calculated according to § 63.168(e)

$\%V_L$ = percent leaking valves, calculated according to § 63.168(e), at the time elected to use provisions of § 63.168(d)(1)(ii)

(B) The owner or operator shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in § 63.175(d) of this subpart.

(e) The following requirements shall be met if an owner or operator elects to use a quality improvement program of technology review and improvement:

(1) The owner or operator shall comply with the requirements in § 63.168 of this subpart except the requirement for monthly monitoring in § 63.168(d)(1)(i) of this subpart does not apply.

(2) The owner or operator shall collect the data specified below, and maintain records as required in § 63.181(h)(2), for each valve in each process unit subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or group of process units basis. The data shall include the following:

(i) Valve type (e.g., ball, gate, check); valve manufacturer; valve design (e.g., external stem or actuating mechanism, flanged body); materials of construction; packing material; and year installed.

(ii) Service characteristics of the stream such as operating pressure, temperature, line diameter, and corrosivity.

(iii) Whether the valve is in gas or light liquid service.

(iv) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if adjusted, instrument model number, and date of the observation.

(v) If a leak is detected, the repair methods used and the instrument readings after repair.

(vi) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.

(4) The owner or operator shall inspect all valves removed from the process unit due to leaks. The inspection shall determine which parts of the valve have failed and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.

(5)(i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph

(e)(2) of this section to determine the services, operating or maintenance practices, and valve designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to identify any superior performing valve technologies that are applicable to the service(s), operating conditions, or valve designs associated with poorer than average emission performance. A superior performing valve technology is one for which a group of such valves has a leak frequency of less than 2 percent for specific applications in such a process unit. A candidate superior performing valve technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 2 percent leaking valves in the process unit.

(iii) The analysis shall include consideration of:

(A) The data obtained from the inspections of valves removed from the process unit due to leaks,

(B) Information from the available literature and from the experience of other plant sites that will identify valve designs or technologies and operating conditions associated with low emission performance for specific services, and

(C) Information on limitations on the service conditions for the valve design and operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of Phase III. The first analysis shall be performed using a minimum of two quarters of

data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify superior performing valve designs or technologies that can be applied to the operating conditions and services identified as having poorer than average performance, except as provided in paragraph (e)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit the valve designs or technologies that have been identified by others as having low emission performance.

(i) The trial program shall include on-line trials of valves or operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 2 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing valve technologies is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in § 63.181(h)(5)(ii) of this subpart.

(ii) The number of valves in the trial evaluation program shall be the lesser of 1 percent or 20 valves for programs involving single process units and the lesser of 1 percent or 50 valves for programs involving groups of process units.

(iii) The trial evaluation program shall specify and include documentation of:

(A) The candidate superior performing valve designs or technologies to be evaluated, the stages for evaluating the identified candidate valve designs or technologies, including the estimated time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and

(D) Conclusions regarding the emission performance and the appropriate

operating conditions and services for the trial valves.

(iv) The performance trials shall initially be conducted for, at least, a 6-month period beginning not later than 18 months after the start of Phase III. Not later than 24 months after the start of Phase III, the owner or operator shall have identified valve designs or technologies that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (e)(6)(vi) of this section. The compilation of candidate and demonstrated superior emission performance valve designs or technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 total employees shall be exempt from trial evaluations of valves. Plant sites exempt from the trial evaluations of valves shall begin the program at the start of the fourth year of Phase III.

(vi) An owner or operator who has conducted performance trials on all candidate superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible candidate superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) Each owner or operator who elects to use a quality improvement program for technology review and improvement shall prepare and implement a valve quality assurance program that details purchasing specifications and maintenance procedures for all valves

in the process unit. The quality assurance program may establish any number of categories, or classes, of valves as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (e)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (e)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be reviewed and, as appropriate, updated each year as long as the process unit has 2 percent or more leaking valves.

(i) The quality assurance program shall:

(A) Establish minimum design standards for each category of valves. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the valve;

(C) Include a written procedure for bench testing of valves that specifies performance criteria for acceptance of valves and specifies criteria for the precision and accuracy of the test apparatus. All valves repaired off-line after preparation of the quality assurance plan shall be bench-tested for leaks. This testing may be conducted by the owner or operator of the process unit, by the vendor, or by a designated representative. The owner or operator shall install only those valves that have been documented through bench-testing to be nonleaking.

(D) Require that all valves repaired on-line be monitored using the method specified in § 63.180(b) of this subpart for leaks for 2 successive months, after repair.

(E) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the process unit or by a designated representative.

(F) Detail off-line valve maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished valves will meet the design specifications for the valve type and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees; and no later than the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees.

(8) Beginning at the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees and at the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees, each valve that is replaced for any reason shall be replaced with a new or modified valve that complies with the quality assurance standards for the valve category and that is identified as superior emission performance technology. Superior emission performance technology means valves or valve technologies identified with emission performance that, combined with appropriate process, operating, and maintenance practices, will result in less than 2 percent leaking valves for specific applications in a large population, except as provided in paragraph (e)(8)(ii) of this section.

(i) The valves shall be maintained as specified in the quality assurance program.

(ii) If a superior emission performance technology cannot be identified, then valve replacement shall be with one of (if several) the lowest emission performance technologies that has been identified for the specific application.

[59 FR 19568, Apr. 22, 1994, as amended at 60 FR 63631, Dec. 12, 1995]

§ 63.176 Quality improvement program for pumps.

(a) In Phase III, if, on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit

(or plant site) or three pumps in a process unit (or plant site) leak, the owner or operator shall comply with the requirements of this section as specified below:

(1) Pumps that are in food/medical service or in polymerizing monomer service shall comply with all requirements except for those specified in paragraph (d)(8) of this section.

(2) Pumps that are not in food/medical or polymerizing monomer service shall comply with all requirements of this section.

(b) The owner or operator shall comply with the requirements of this section until the number of leaking pumps is less than the greater of either 10 percent of the pumps or three pumps, calculated as a 6-month rolling average, in the process unit (or plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in § 63.163 of this subpart.

(c) If in a subsequent monitoring period, the process unit (or plant site) has greater than 10 percent of the pumps leaking or three pumps leaking (calculated as a 6-month rolling average), the owner or operator shall resume the quality improvement program starting at performance trials.

(d) The quality improvement program shall include the following:

(1) The owner or operator shall comply with the requirements in § 63.163 of this subpart.

(2) The owner or operator shall collect the following data, and maintain records as required in § 63.181(h)(3), for each pump in each process unit (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or plant site basis.

(i) Pump type (e.g., piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (e.g., external shaft, flanged body); materials of construction; if applicable, barrier fluid or packing material; and year installed.

(ii) Service characteristics of the stream such as discharge pressure, temperature, flow rate, corrosivity, and annual operating hours.

(iii) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if appropriate, instrument model number, and date of the observation.

(iv) If a leak is detected, the repair methods used and the instrument readings after repair.

(v) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.

(3) The owner or operator shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.

(4) The owner or operator shall inspect all pumps or pump seals which exhibited frequent seal failures and were removed from the process unit due to leaks. The inspection shall determine the probable cause of the pump seal failure or of the pump leak and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.

(5)(i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (d)(2) of this section to determine the services, operating or maintenance practices, and pump or pump seal designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to determine if there are superior performing pump or pump seal technologies that are applicable to the service(s), operating conditions, or pump or pump seal designs associated with poorer than average emission performance. A superior performing pump or pump seal technology is one with a leak frequency of less than 10 percent for specific applications in the process

unit or plant site. A candidate superior performing pump or pump seal technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 10 percent leaking pumps in the process unit (or plant site).

(iii) The analysis shall include consideration of:

(A) The data obtained from the inspections of pumps and pump seals removed from the process unit due to leaks;

(B) Information from the available literature and from the experience of other plant sites that will identify pump designs or technologies and operating conditions associated with low emission performance for specific services; and

(C) Information on limitations on the service conditions for the pump seal technology operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a plant site, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of the quality improvement program. The first analysis shall be performed using a minimum of 6 months of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify use of superior performing pump seal technology or pumps that can be applied to the areas identified as having poorer than average performance, except as provided in paragraph (d)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit (or plant site) the pump designs or seal technologies, and operating and maintenance practices that have been identified by others as having low emission performance.

tified by others as having low emission performance.

(i) The trial program shall include on-line trials of pump seal technologies or pump designs and operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 10 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing pump seal technologies or pumps is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in § 63.181(h)(5)(ii).

(ii) The number of pump seal technologies or pumps in the trial evaluation program shall be the lesser of 1 percent or two pumps for programs involving single process units and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units. The minimum number of pumps or pump seal technologies in a trial program shall be one.

(iii) The trial evaluation program shall specify and include documentation of:

(A) The candidate superior performing pump seal designs or technologies to be evaluated, the stages for evaluating the identified candidate pump designs or pump seal technologies, including the time period necessary to test the applicability;

(B) The frequency of monitoring or inspection of the equipment;

(C) The range of operating conditions over which the component will be evaluated; and

(D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial pump seal technologies or pumps.

(iv) The performance trials shall initially be conducted, at least, for a 6-month period beginning not later than 18 months after the start of the quality improvement program. No later than 24 months after the start of the quality improvement program, the owner or operator shall have identified pump

seal technologies or pump designs that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (d)(6)(vi) of this section. The initial list of superior emission performance pump designs or pump seal technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.

(v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 employees shall be exempt from trial evaluations of pump seals or pump designs. Plant sites exempt from the trial evaluations of pumps shall begin the pump seal or pump replacement program at the start of the fourth year of the quality improvement program.

(vi) An owner or operator who has conducted performance trials on all alternative superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible alternative superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.

(7) Each owner or operator shall prepare and implement a pump quality assurance program that details purchasing specifications and maintenance procedures for all pumps and pump seals in the process unit. The quality assurance program may establish any number of categories, or classes, of pumps as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed con-

sidering the findings of the data analysis required under paragraph (d)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (d)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be updated each year as long as the process unit has the greater of either 10 percent or more leaking pumps or has three leaking pumps.

(i) The quality assurance program shall:

(A) Establish minimum design standards for each category of pumps or pump seal technology. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

(B) Require that all equipment orders specify the design standard (or minimum tolerances) for the pump or the pump seal;

(C) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the plant site or process unit or by a designated representative; and

(D) Detail off-line pump maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished pumps and pump seals will meet the design specifications for the pump category and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees; and no later than the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees.

(8) Beginning at the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees and at the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less

than 100 employees, the owner or operator shall replace, as described in paragraphs (d)(8)(i) and (d)(8)(ii) of this section, the pumps or pump seals that are not superior emission performance technology with pumps or pump seals that have been identified as superior emission performance technology and that comply with the quality assurance standards for the pump category. Superior emission performance technology is that category or design of pumps or pump seals with emission performance which, when combined with appropriate process, operating, and maintenance practices, will result in less than 10 percent leaking pumps for specific applications in the process unit or plant site. Superior emission performance technology includes material or design changes to the existing pump, pump seal, seal support system, installation of multiple mechanical seals or equivalent, or pump replacement.

(i) Pumps or pump seals shall be replaced at the rate of 20 percent per year based on the total number of pumps in light liquid service. The calculated value shall be rounded to the nearest nonzero integer value. The minimum number of pumps or pump seals shall be one. Pump replacement shall continue until all pumps subject to the requirements of § 63.163 of this subpart are pumps determined to be superior performance technology.

(ii) The owner or operator may delay replacement of pump seals or pumps with superior technology until the next planned process unit shutdown, provided the number of pump seals and pumps replaced is equivalent to the 20 percent or greater annual replacement rate.

(iii) The pumps shall be maintained as specified in the quality assurance program.

§ 63.177 Alternative means of emission limitation: General.

(a) Permission to use an alternative means of emission limitation under section 112(h)(3) of the Act shall be governed by the following procedures in paragraphs (b) through (e) of this section.

(b) Where the standard is an equipment, design, or operational requirement:

(1) Each owner or operator applying for permission to use an alternative means of emission limitation under § 63.6(g) of subpart A of this part shall be responsible for collecting and verifying emission performance test data for an alternative means of emission limitation.

(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Where the standard is a work practice:

(1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation.

(2) For each kind of equipment for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.

(3) For each kind of equipment for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for permission shall commit, in writing, for each kind of equipment to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.

(5) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.

(6) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same or greater emission reduction as the required work practices of this subpart.

(d) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.

(e)(1) Manufacturers of equipment used to control equipment leaks of an organic HAP may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the organic HAP achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will grant permission according to the provisions of paragraphs (b), (c), and (d) of this section.

§ 63.178 Alternative means of emission limitation: Batch processes.

(a) As an alternative to complying with the requirements of §§ 63.163 through 63.171 and §§ 63.173 through 63.176, an owner or operator of a batch process that operates in organic HAP service during the calendar year may comply with one of the standards specified in paragraphs (b) and (c) of this section, or the owner or operator may petition for approval of an alternative standard under the provisions of § 63.177 of this subpart. The alternative standards of this section provide the options of pressure testing or monitoring the equipment for leaks. The owner or operator may switch among the alternatives provided the change is documented as specified in § 63.181.

(b) The following requirements shall be met if an owner or operator elects to use pressure testing of batch product-process equipment to demonstrate compliance with this subpart. An owner or operator who complies with the provisions of this paragraph is exempt from the monitoring provisions of § 63.163, §§ 63.168 and 63.169, and §§ 63.173 through 63.176 of this subpart.

(1) Each time equipment is reconfigured for production of a different product or intermediate, the batch product-process equipment train shall be pressure-tested for leaks before organic HAP is first fed to the equipment and the equipment is placed in organic HAP service.

(i) When the batch product-process train is reconfigured to produce a different product, pressure testing is re-

quired only for the new or disturbed equipment.

(ii) Each batch product process that operates in organic HAP service during a calendar year shall be pressure tested at least once during that calendar year.

(iii) Pressure testing is not required for routine seal breaks, such as changing hoses or filters, which are not part of the reconfiguration to produce a different product or intermediate.

(2) The batch product process equipment shall be tested either using the procedures specified in § 63.180(f) of this subpart for pressure or vacuum loss or with a liquid using the procedures specified in § 63.180(g) of this subpart.

(3)(i) For pressure or vacuum tests, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 psig) in 1 hour or if there is visible, audible, or olfactory evidence of fluid loss.

(ii) For pressure tests using a liquid, a leak is detected if there are indications of liquids dripping or if there is other evidence of fluid loss.

(4)(i) If a leak is detected, it shall be repaired and the batch product-process equipment shall be retested before start-up of the process.

(ii) If a batch product-process fails the retest or the second of two consecutive pressure tests, it shall be repaired as soon as practicable, but not later than 30 calendar days after the second pressure test, provided the conditions specified in paragraph (d) of this section are met.

(c) The following requirements shall be met if an owner or operator elects to monitor the equipment to detect leaks by the method specified in § 63.180(b) of this subpart to demonstrate compliance with this subpart.

(1) The owner or operator shall comply with the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.176 of this subpart.

(2) The equipment shall be monitored for leaks by the method specified in § 63.180(b) of this subpart when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

(3) The equipment shall be monitored for leaks as specified below:

(i) Each time the equipment is reconfigured for the production of a new product, the reconfigured equipment shall be monitored for leaks within 30 days of start-up of the process. This initial monitoring of reconfigured equipment shall not be included in determining percent leaking equipment in the process unit.

(ii) Connectors shall be monitored in accordance with the requirements in § 63.174 of this subpart.

(iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1 of this subpart. The operating time shall be determined as the proportion of the year the batch product-process that is subject to the provisions of this subpart is operating.

(iv) The monitoring frequencies specified in table 1 of this subpart are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor anytime during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. For example, if the equipment is not operating during the scheduled monitoring period, the monitoring can be done during the next period when the process is operating.

(4) If a leak is detected, it shall be repaired as soon as practicable but not later than 15 calendar days after it is detected, except as provided in paragraph (d) of this section.

(d) Delay of repair of equipment for which leaks have been detected is allowed if the replacement equipment is not available providing the following conditions are met:

(1) Equipment supplies have been depleted and supplies had been sufficiently stocked before the supplies were depleted.

(2) The repair is made no later than 10 calendar days after delivery of the replacement equipment.

§ 63.179 Alternative means of emission limitation: Enclosed-vented process units.

Process units enclosed in such a manner that all emissions from equipment leaks are vented through a closed-vent system to a control device meeting the requirements of § 63.172 of this subpart are exempt from the requirements of § 63.163, through 63.171, and §§ 63.173 and 63.174 of this subpart. The enclosure shall be maintained under a negative pressure at all times while the process unit is in operation to ensure that all emissions are routed to a control device.

§ 63.180 Test methods and procedures.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.

(b) Monitoring, as required under this subpart, shall comply with the following requirements:

(1) Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A.

(2)(i) Except as provided for in paragraph (b)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.

(ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (b)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (b)(2)(i) of this section.

(3) The instrument shall be calibrated before use on each day of its use

by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(4) Calibration gases shall be:

(i) Zero air (less than 10 parts per million of hydrocarbon in air); and

(ii) Mixtures of methane in air at the concentrations specified in paragraphs (b)(4)(ii)(A) through (b)(4)(ii)(C) of this section. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (b)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.

(A) For Phase I, a mixture of methane or other compounds, as applicable, in air at a concentration of approximately, but less than, 10,000 parts per million.

(B) For Phase II, a mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million for agitators, 5,000 parts per million for pumps, and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

(C) For Phase III, a mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 2,000 parts per million for pumps in food/medical service; 5,000 parts per million for pumps in polymerizing monomer service; 1,000 parts per million for all other pumps; and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

(iii) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is

approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

(5) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

(6) Monitoring data that do not meet the criteria specified in paragraphs (b)(1) through (b)(5) of this section may be used to qualify for less frequent monitoring under the provisions in § 63.168(d)(2) and (d)(3) or § 63.174(b)(3)(ii) or (b)(3)(iii) of this subpart provided the data meet the conditions specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.

(i) The data were obtained before April 22, 1994.

(ii) The departures from the criteria specified in paragraphs (b)(1) through (b)(5) of this section or from the specified monitoring frequency of § 63.168(c) are minor and do not significantly affect the quality of the data. Examples of minor departures are monitoring at a slightly different frequency (such as every six weeks instead of monthly or quarterly), following the performance criteria of section 3.1.2(a) of Method 21 of appendix A of 40 CFR part 60 instead of paragraph (b)(2) of this section, or monitoring at a different leak definition if the data would indicate the presence or absence of a leak at the concentration specified in this subpart. Failure to use a calibrated instrument is not considered a minor departure.

(c) When equipment is monitored for compliance as required in §§ 63.164(i), 63.165(a), and 63.172(f) or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by this subpart, the owner or operator may elect to adjust or not to adjust the instrument readings for background. If an owner or operator elects to not adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (b)(1) through (b)(4) of this section. In such case, all instrument readings

shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (c)(1) through (c)(4) of this section.

(1) The requirements of paragraphs (b) (1) through (4) of this section shall apply.

(2) The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.

(3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A.

(4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance.

(d)(1) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used.

(2)(i) An owner or operator may use good engineering judgment rather than the procedures in paragraph (d)(1) of this section to determine that the percent organic HAP content does not exceed 5 percent by weight. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (d)(1) of this section shall be used to resolve the disagreement.

(ii) Conversely, the owner or operator may determine that the organic HAP content of the process fluid does not

exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent.

(3) If an owner or operator determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (d)(1) of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.

(4) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.

(e) When a flare is used to comply with § 63.172(d) of this subpart, the compliance determination shall be conducted using Method 22 of 40 CFR part 60, appendix A to determine visible emissions.

(f) The following procedures shall be used to pressure test batch product-process equipment for pressure or vacuum loss to demonstrate compliance with the requirements of § 63.178(b)(3)(i) of this subpart.

(1) The batch product-process equipment train shall be pressurized with a gas to a pressure less than the set pressure of any safety relief devices or valves or to a pressure slightly above the operating pressure of the equipment, or alternatively, the equipment shall be placed under a vacuum.

(2) Once the test pressure is obtained, the gas source or vacuum source shall be shut off.

(3) The test shall continue for not less than 15 minutes unless it can be determined in a shorter period of time that the allowable rate of pressure drop or of pressure rise was exceeded. The pressure in the batch product-process equipment shall be measured after the gas or vacuum source is shut off and at the end of the test period. The rate of change in pressure in the batch product-process equipment shall be calculated using the following equation:

$$\Delta \frac{P}{t} = \frac{(|P_f - P_i|)}{(t_f - t_i)}$$

where:

$\Delta P/t$ =Change in pressure, psig/hr.

P_f =Final pressure, psig.

P_i =Initial pressure, psig.

$t_f - t_i$ =Elapsed time, hours.

(4) The pressure shall be measured using a pressure measurement device (gauge, manometer, or equivalent) which has a precision of ± 2.5 millimeter mercury in the range of test pressure and is capable of measuring pressures up to the relief set pressure of the pressure relief device. If such a pressure measurement device is not reasonably available, the owner or operator shall use a pressure measurement device with a precision of at least +10 percent of the test pressure of the equipment and shall extend the duration of the test for the time necessary to detect a pressure loss or rise that equals a rate of one psig per hour.

(5) An alternative procedure may be used for leak testing the equipment if the owner or operator demonstrates the alternative procedure is capable of detecting a pressure loss or rise.

(g) The following procedures shall be used to pressure-test batch product-process equipment using a liquid to demonstrate compliance with the requirements of § 63.178(b)(3)(ii) of this subpart.

(1) The batch product-process equipment train, or section of the train, shall be filled with the test liquid (e.g., water, alcohol) until normal operating pressure is obtained. Once the equipment is filled, the liquid source shall be shut off.

(2) The test shall be conducted for a period of at least 60 minutes, unless it can be determined in a shorter period of time that the test is a failure.

(3) Each seal in the equipment being tested shall be inspected for indications of liquid dripping or other indications of fluid loss. If there are any indications of liquids dripping or of fluid loss, a leak is detected.

(4) An alternative procedure may be used for leak testing the equipment, if the owner or operator demonstrates the alternative procedure is capable of detecting losses of fluid.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2792, Jan. 17, 1997]

§ 63.181 Recordkeeping requirements.

(a) An owner or operator of more than one process unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

(b) Except as provided in paragraph (e) of this section, the following information pertaining to all equipment in each process unit subject to the requirements in §§ 63.162 through 63.174 of this subpart shall be recorded:

(1)(i) A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in § 63.174 of this subpart and instrumentation systems) subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by § 63.174 (b)(1) or (b)(2) of this subpart.

(ii) A schedule by process unit for monitoring connectors subject to the provisions of § 63.174(a) of this subpart and valves subject to the provisions of § 63.168(d) of this subpart.

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, under the

provisions of § 63.163(g), § 63.164(h), § 63.165(c), or § 63.173(f) of this subpart.

(ii) A list of identification numbers for compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of § 63.164(i) of this subpart.

(iii) Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of § 63.170 of this subpart.

(3)(i) A list of identification numbers for pressure relief devices subject to the provisions in § 63.165(a) of this subpart.

(ii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of § 63.165(d) of this subpart.

(4) Identification of instrumentation systems subject to the provisions of this subpart. Individual components in an instrumentation system need not be identified.

(5) Identification of screwed connectors subject to the requirements of § 63.174(c)(2) of this subpart. Identification can be by area or grouping as long as the total number within each group or area is recorded.

(6) The following information shall be recorded for each dual mechanical seal system:

(i) Design criteria required in §§ 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) of this subpart and an explanation of the design criteria; and

(ii) Any changes to these criteria and the reasons for the changes.

(7) The following information pertaining to all pumps subject to the provisions of § 63.163(j), valves subject to the provisions of § 63.168(h) and (i) of this subpart, agitators subject to the provisions of § 63.173(h) through (j), and connectors subject to the provisions of § 63.174(f) through (h) of this subpart shall be recorded:

(i) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment.

(ii) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment.

(iii) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair.

(8)(i) A list of valves removed from and added to the process unit, as described in § 63.168(e)(1) of this subpart, if the net credits for removed valves is expected to be used.

(ii) A list of connectors removed from and added to the process unit, as described in § 63.174(i)(1) of this subpart, and documentation of the integrity of the weld for any removed connectors, as required in § 63.174(j) of this subpart. This is not required unless the net credits for removed connectors is expected to be used.

(9)(i) For batch process units that the owner or operator elects to monitor as provided under § 63.178(c) of this subpart, a list of equipment added to batch product process units since the last monitoring period required in § 63.178(c)(3)(ii) and (3)(iii) of this subpart.

(ii) Records demonstrating the proportion of the time during the calendar year the equipment is in use in a batch process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in use for the process unit. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in § 63.178(c)(3)(iii) of this subpart.

(c) For visual inspections of equipment subject to the provisions of this subpart (e.g., § 63.163(b)(3),

§ 63.163(e)(4)(i)), the owner or operator shall document that the inspection was conducted and the date of the inspection. The owner or operator shall maintain records as specified in paragraph (d) of this section for leaking equipment identified in this inspection, except as provided in paragraph (e) of this section. These records shall be retained for 2 years.

(d) When each leak is detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, the following information shall be recorded and kept for 2 years:

(1) The instrument and the equipment identification number and the operator name, initials, or identification number.

(2) The date the leak was detected and the date of first attempt to repair the leak.

(3) The date of successful repair of the leak.

(4) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by § 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(6) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(7)(i) Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in § 63.174(b) of this subpart, as described in § 63.174(c)(1) of this subpart, unless the owner or operator elects to comply with the provisions of § 63.174(c)(1)(ii) of this subpart.

(ii) The date and results of monitoring as required in § 63.174(c) of this subpart. If identification of connectors that have been opened or otherwise had the seal broken is made by location under paragraph (d)(7)(i) of this sec-

tion, then all connectors within the designated location shall be monitored.

(8) The date and results of the monitoring required in § 63.178(c)(3)(i) of this subpart for equipment added to a batch process unit since the last monitoring period required in § 63.178(c)(3)(ii) and (c)(3)(iii) of this subpart. If no leaking equipment is found in this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.

(9) Copies of the periodic reports as specified in § 63.182(d) of this subpart, if records are not maintained on a computerized database capable of generating summary reports from the records.

(e) The owner or operator of a batch product process who elects to pressure test the batch product process equipment train to demonstrate compliance with this subpart is exempt from the requirements of paragraphs (b), (c), (d), and (f) of this section. Instead, the owner or operator shall maintain records of the following information:

(1) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in a batch product process equipment train.

(2) [Reserved]

(3) Physical tagging of the equipment to identify that it is in organic HAP service and subject to the provisions of this subpart is not required. Equipment in a batch product process subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(4) The dates of each pressure test required in § 63.178(b) of this subpart, the test pressure, and the pressure drop observed during the test.

(5) Records of any visible, audible, or olfactory evidence of fluid loss.

(6) When a batch product process equipment train does not pass two consecutive pressure tests, the following information shall be recorded in a log and kept for 2 years:

(i) The date of each pressure test and the date of each leak repair attempt.

(ii) Repair methods applied in each attempt to repair the leak.

(iii) The reason for the delay of repair.

(iv) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.

(v) The date of successful repair.

(f) The dates and results of each compliance test required for compressors subject to the provisions in § 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in §§ 63.165 (a) and (b) of this subpart. The results shall include:

(1) The background level measured during each compliance test.

(2) The maximum instrument reading measured at each piece of equipment during each compliance test.

(g) The owner or operator shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section for closed-vent systems and control devices subject to the provisions of § 63.172 of this subpart. The records specified in paragraph (g)(1) of this section shall be retained for the life of the equipment. The records specified in paragraphs (g)(2) and (g)(3) of this section shall be retained for 2 years.

(1) The design specifications and performance demonstrations specified in paragraphs (g)(1)(i) through (g)(1)(iv) of this section.

(i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(iii) The flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by § 63.11(b) of subpart A of this part.

(iv) A description of the parameter or parameters monitored, as required in § 63.172(e) of this subpart, to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(2) Records of operation of closed-vent systems and control devices, as specified in paragraphs (g)(2)(i) through (g)(2)(iii) of this section.

(i) Dates and durations when the closed-vent systems and control devices required in §§ 63.163 through 63.166, and § 63.170 of this subpart are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.

(ii) Dates and durations during which the monitoring system or monitoring device is inoperative.

(iii) Dates and durations of start-ups and shutdowns of control devices required in §§ 63.163 through 63.166, and § 63.170 of this subpart.

(3) Records of inspections of closed-vent systems subject to the provisions of § 63.172, as specified in paragraphs (g)(2)(i) through (g)(2)(iii) of this section.

(i) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) of this subpart during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(ii) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) of this subpart during which leaks were detected, the information specified in paragraph (d) of this section shall be recorded.

(h) Each owner or operator of a process unit subject to the requirements of §§ 63.175 and 63.176 of this subpart shall maintain the records specified in paragraphs (h)(1) through (h)(9) of this section for the period of the quality improvement program for the process unit.

(1) For owners or operators who elect to use a reasonable further progress quality improvement program, as specified in § 63.175(d) of this subpart:

(i) All data required in § 63.175(d)(2) of this subpart.

(ii) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.

(iii) The beginning and ending dates while meeting the requirements of § 63.175(d) of this subpart.

(2) For owners or operators who elect to use a quality improvement program of technology review and improvement, as specified in § 63.175(e) of this subpart:

(i) All data required in § 63.175(e)(2) of this subpart.

(ii) The percent leaking valves observed each quarter.

(iii) Documentation of all inspections conducted under the requirements of § 63.175(e)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of § 63.175(e) of this subpart.

(3) For owners or operators subject to the requirements of the pump quality improvement program as specified in § 63.176 of this subpart:

(i) All data required in § 63.176(d)(2) of this subpart.

(ii) The rolling average percent leaking pumps.

(iii) Documentation of all inspections conducted under the requirements of § 63.176(d)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of § 63.176(d) of this subpart.

(4) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.

(5) Records of all analyses required in §§ 63.175(e) and 63.176(d) of this subpart. The records will include the following:

(i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.

(ii) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.

(iii) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under §§ 63.175(e)(6)(iii) and 63.176(d)(6)(iii) of this subpart.

(iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.

(6) All records documenting the quality assurance program for valves or

pumps as specified in §§ 63.175(e)(7) and 63.176(d)(7) of this subpart.

(7) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in § 63.175(e)(7) and § 63.176(d)(7) of this subpart.

(8) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in § 63.176(d)(8) of this subpart.

(9) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.

(i) The owner or operator of equipment in heavy liquid service shall comply with the requirements of either paragraph (i)(1) or (i)(2) of this section, as provided in paragraph (i)(3) of this section.

(1) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.

(2) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.

(3) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of “in light liquid service.” Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(j) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit subject to the provisions of this subpart under § 63.160 of this subpart.

(k) Owners and operators choosing to comply with the requirements of § 63.179 of this subpart shall maintain the following records:

(1) Identification of the process unit(s) and the organic HAP's they handle.

(2) A schematic of the process unit, enclosure, and closed-vent system.

(3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 60 FR 18030, Apr. 10, 1995; 61 FR 31441, June 20, 1996; 62 FR 2792, Jan. 17, 1997]

§ 63.182 Reporting requirements.

(a) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.

(1) An Initial Notification described in paragraph (b) of this section, and

(2) A Notification of Compliance Status described in paragraph (c) of this section,

(3) Periodic Reports described in paragraph (d) of this section, and

(4)–(5) [Reserved]

(6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing an existing source up to 1 additional year beyond the compliance date specified in the subpart that references this subpart.

(i) For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application. If the State in which the source is located does not have an approved operating permit program, a request for an extension shall be submitted to the Administrator as a separate submittal. The dates specified in § 63.6(i) of subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart.

(ii) A request for an extension of compliance must include the data described in § 63.6(i)(6)(i) (A), (B), and (D) of subpart A of this part.

(iii) The requirements in § 63.6(i)(8) through (i)(14) of subpart A of this part will govern the review and approval of requests for extensions of compliance with this subpart.

(b) Each owner or operator of an existing or new source subject to the provisions of this subpart shall submit a written Initial Notification to the Administrator, containing the informa-

tion described in paragraph (b)(1), according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in § 63.9(b)(1) through (b)(3) of subpart A of this part shall not apply to owners or operators of sources subject to this subpart.

(1) The Initial Notification shall include the following information:

(i) The name and address of the owner or operator;

(ii) The address (physical location) of the affected source;

(iii) An identification of the chemical manufacturing processes subject to this subpart; and

(iv) A statement of whether the source can achieve compliance by the applicable compliance date specified in the subpart in 40 CFR part 63 that references this subpart.

(2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.

(i) For an existing source, the Initial Notification shall be submitted within 120 days after the date of promulgation of the subpart that references this subpart.

(ii) For a new source that has an initial start-up 90 days after the date of promulgation of this subpart or later, the application for approval of construction or reconstruction required by § 63.5(d) of subpart A of this part shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of the subpart that references this subpart).

(iii) For a new source that has an initial start-up prior to 90 days after the date of promulgation of the applicable subpart, the Initial Notification shall be submitted within 90 days after the date of promulgation of the subpart that references this subpart.

(c) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 90 days after the compliance dates specified in the subpart in 40 CFR part 63 that references this subpart, except as provided in paragraph (c)(4) of this section.

(1) The notification shall provide the information listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this section for each process unit subject to the requirements of § 63.163 through § 63.174 of this subpart.

(i) Process unit identification.

(ii) Number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service.

(iii) Method of compliance with the standard (for example, “monthly leak detection and repair” or “equipped with dual mechanical seals”).

(iv) Planned schedule for each phase of the requirements in § 63.163 and § 63.168 of this subpart.

(2) The notification shall provide the information listed in paragraphs (c)(2)(i) and (c)(2)(ii) of this section for each process unit subject to the requirements of § 63.178(b) of this subpart.

(i) Batch products or product codes subject to the provisions of this subpart, and

(ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this subpart.

(3) The notification shall provide the information listed in paragraphs (c)(3)(i) and (c)(3)(ii) of this section for each process unit subject to the requirements in § 63.179 of this subpart.

(i) Process unit identification.

(ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of § 63.172 of this subpart.

(4) For existing sources subject to subpart F of this part, the Notification of Compliance Status shall be submitted for the group of process units with the earliest compliance date specified in § 63.100(k) of subpart F of this part, by no later than 90 days after the compliance date for that group. The Notification of Compliance Status for each subsequent group shall be submitted as part of the first periodic report that is due not less than 90 days after the compliance date for that group.

(d) The owner or operator of a source subject to this subpart shall submit Periodic Reports.

(1) A report containing the information in paragraphs (d)(2), (d)(3), and (d)(4) of this section shall be submitted

semiannually starting 6 months after the Notification of Compliance Status, as required in paragraph (c) of this section. The first periodic report shall cover the first 6 months after the compliance date specified in § 63.100(k)(3) of subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.

(2) For each process unit complying with the provisions of § 63.163 through § 63.174 of this subpart, the summary information listed in paragraphs (i) through (xvi) of this paragraph for each monitoring period during the 6-month period.

(i) The number of valves for which leaks were detected as described in § 63.168(b) of this subpart, the percent leakers, and the total number of valves monitored;

(ii) The number of valves for which leaks were not repaired as required in § 63.168(f) of this subpart, identifying the number of those that are determined nonrepairable;

(iii) The number of pumps for which leaks were detected as described in § 63.163(b) of this subpart, the percent leakers, and the total number of pumps monitored;

(iv) The number of pumps for which leaks were not repaired as required in § 63.163(c) of this subpart;

(v) The number of compressors for which leaks were detected as described in § 63.164(f) of this subpart;

(vi) The number of compressors for which leaks were not repaired as required in § 63.164(g) of this subpart;

(vii) The number of agitators for which leaks were detected as described in § 63.173(a) and (b) of this subpart;

(viii) The number of agitators for which leaks were not repaired as required in § 63.173(c) of this subpart;

(ix) The number of connectors for which leaks were detected as described in § 63.174(a) of this subpart, the percent of connectors leaking, and the total number of connectors monitored;

(x) [Reserved]

(xi) The number of connectors for which leaks were not repaired as required in § 63.174(d) of this subpart, identifying the number of those that are determined nonrepairable;

(xii) [Reserved]

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(xiii) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.

(xiv) The results of all monitoring to show compliance with §§ 63.164(i), 63.165(a), and 63.172(f) of this subpart conducted within the semiannual reporting period.

(xv) If applicable, the initiation of a monthly monitoring program under § 63.168(d)(1)(i) of this subpart, or a quality improvement program under either §§ 63.175 or 63.176 of this subpart.

(xvi) If applicable, notification of a change in connector monitoring alternatives as described in § 63.174(c)(1) of this subpart.

(xvii) If applicable, the compliance option that has been selected under § 63.172(n).

(3) For owners or operators electing to meet the requirements of § 63.178(b) of this subpart, the report shall include the information listed in paragraphs (i)

through (v) of this paragraph for each process unit.

(i) Batch product process equipment train identification;

(ii) The number of pressure tests conducted;

(iii) The number of pressure tests where the equipment train failed the pressure test;

(iv) The facts that explain any delay of repairs; and

(v) The results of all monitoring to determine compliance with § 63.172(f) of this subpart.

(4) The information listed in paragraph (c) of this section for the Notification of Compliance Status for process units with later compliance dates. Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 60 FR 18030, Apr. 10, 1995; 60 FR 63631, Dec. 12, 1995; 62 FR 2792, Jan. 17, 1997]

TABLE 1 TO SUBPART H—BATCH PROCESSES
Monitoring Frequency for Equipment Other than Connectors

Operating time (% of year)	Equivalent continuous process monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three times	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

TABLE 2 TO SUBPART H—SURGE CONTROL
VESSELS AND BOTTOMS RECEIVERS AT EXIST-
ING SOURCES

Vessel capacity (cubic meters)	Vapor pres- sure ¹ (kilopascals)
75 ≤ capacity < 151	≥ 13.1
151 ≤ capacity	≥ 5.2 ^a

¹ Maximum true vapor pressure of total organic HAP at operating temperature as defined in subpart G of this part.

[60 FR 18025, Apr. 10, 1995]

TABLE 3 TO SUBPART H—SURGE CONTROL
VESSELS AND BOTTOMS RECEIVERS AT NEW
SOURCES

Vessel capacity (cubic meters)	Vapor pres- sure ¹ (kilopascals)
38 ≤ capacity < 151	≥ 13.1

TABLE 3 TO SUBPART H—SURGE CONTROL
VESSELS AND BOTTOMS RECEIVERS AT NEW
SOURCES—Continued

Vessel capacity (cubic meters)	Vapor pres- sure ¹ (kilopascals)
151 ≤ capacity	≥ 0.7

¹ Maximum true vapor pressure of total organic HAP at operating temperature as defined in subpart G of this part.

[60 FR 18025, Apr. 10, 1995]

Subpart I—National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks

SOURCE: 59 FR 19587, Apr. 22, 1994, unless otherwise noted.

§ 63.190 Applicability and designation of source.

(a) This subpart provides applicability provisions, definitions, and other general provisions that are applicable to sources subject to this subpart.

(b) Except as provided in paragraph (b)(7) of this section, the provisions of subparts I and H of this part apply to emissions of the designated organic HAP from the processes specified in paragraphs (b)(1) through (b)(6) of this section that are located at a plant site that is a major source as defined in section 112(a) of the Act. The specified processes are further defined in § 63.191.

(1) Styrene-butadiene rubber production (butadiene and styrene emissions only).

(2) Polybutadiene rubber production (butadiene emissions only).

(3) The processes producing the agricultural chemicals listed in paragraphs (b)(3)(i) through (b)(3)(v) of this section (butadiene, carbon tetrachloride, methylene chloride, and ethylene dichloride emissions only).

- (i) Captafol[®],
- (ii) Captan[®],
- (iii) Chlorothalonil,
- (iv) Dacthal, and
- (v) Tordon[™] acid.

(4) Processes producing the polymers/resins or other chemical products listed in paragraphs (b)(4)(i) through (b)(4)(vi) of this section (carbon tetrachloride, methylene chloride, tetrachloroethylene, chloroform, and ethylene dichloride emissions only).

- (i) Hypalon[®],
- (ii) Oxybisphenoxarsine/1,3-diisocyanate (OBPA[®]),
- (iii) Polycarbonates,
- (iv) Polysulfide rubber,
- (v) Chlorinated paraffins, and
- (vi) Symmetrical tetrachloropyridine.

(5) Pharmaceutical production processes using carbon tetrachloride or methylene chloride (carbon tetrachloride and methylene chloride emissions only).

(6) Processes producing the polymers/resins or other chemical products listed in paragraphs (b)(6)(i) through (b)(6)(v) of this section (butadiene emissions only).

- (i) [Reserved]
- (ii) Methylmethacrylate-butadiene-styrene resins (MBS)
- (iii) Butadiene-furfural cotrimer,
- (iv) Methylmethacrylate-acrylonitrile-butadiene-styrene (MABS) resins, and
- (v) Ethylidene norbornene.

(7) The owner or operator of a plant site at which a process specified in paragraphs (b)(1) through (b)(6) of this section is located is exempt from all requirements of this subpart I until not later than April 22, 1997 if the owner or operator certifies, in a notification to the appropriate EPA Regional Office, not later than May 14, 1996, that the plant site at which the process is located emits, and will continue to emit, during any 12-month period, less than 10 tons per year of any individual HAP, and less than 25 tons per year of any combination of HAP.

(i) If such a determination is based on limitations and conditions that are not federally enforceable (as defined in subpart A of this part), the owner or operator shall document the basis for the determination as specified in paragraphs (b)(7)(i)(A) through (b)(7)(i)(C).

(A) The owner or operator shall identify all HAP emission points at the plant site, including those emission points subject to and emission points not subject to subparts F, G, and H of this part;

(B) The owner or operator shall calculate the amount of annual HAP emissions released from each emission point at the plant site, using acceptable measurement or estimating techniques for maximum expected operating conditions at the plant site. Examples of estimating procedures that are considered acceptable include the calculation procedures in § 63.150 of subpart G, the early reduction demonstration procedures specified in §§ 63.74(c)(2), (c)(3), (d)(2), (d)(3), and (g),

or accepted engineering practices. If the total annual HAP emissions for the plant site are annually reported under EPCRA section 313, then such reported annual emissions may be used to satisfy the requirements of this paragraph.

(C) The owner or operator shall sum the amount of annual HAP emissions from all emission points on the plant site. If the total emissions of any one HAP are less than 10 tons per year and the total emissions of any combination of HAP are less than 25 tons per year, the plant site qualifies for the exemption described in paragraph (b)(7) of this section, provided that emissions are kept below these thresholds.

(ii) If such a determination is based on limitations and conditions that are federally enforceable, and the plant site is not a major source (as defined in subpart A of this part), the owner or operator is not subject to the provisions of paragraph (b)(7) of this section.

(c) The owner or operator of a process listed in paragraph (b) of this section that does not have the designated organic hazardous air pollutants present in the process shall comply only with the requirements of § 63.192(k) of this subpart. To comply with this subpart, such processes shall not be required to comply with the provisions of subpart A of this part.

(d) For the purposes of subparts I and H of this part, the source includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and instrumentation systems that are associated with the processes identified in paragraph (b) of this section and are intended to operate in organic hazardous air pollutant service (as defined in § 63.191 of this subpart) for 300 hours or more during the calendar year. If specific items of equipment, comprising part of a process unit subject to this subpart, are managed by different administrative organizations (e.g., different companies, affiliates, departments, divisions, etc.) those items of equipment may be aggregated with any process unit within the source for all purposes under subpart H of this part, providing there is no delay in the appli-

cable compliance date in paragraph (e) of this section.

(e) The owner or operator of a process subject to this subpart is required to comply with the provisions of subpart H of this part on or before the dates specified in paragraph (e)(1) or (e)(2) of this section, unless the owner or operator eliminates the use or production of all HAP's that cause the process to be subject to this rule no later than 18 months after April 22, 1994.

(1) New sources that commence construction or reconstruction after December 31, 1992 shall comply upon initial start-up or April 22, 1994.

(2) Existing sources shall comply no later than October 24, 1994, except as provided in paragraphs (e)(3) through (e)(6) of this section or unless an extension has been granted by the EPA Regional Office or operating permit authority, as provided in § 63.6(i) of subpart A of this part.

(3) Existing process units shall be in compliance with the requirements of § 63.164 of subpart H no later than May 10, 1995, for any compressor meeting one or more of the criteria in paragraphs (e)(3)(i) through (e)(3)(iv) of this section, if the work can be accomplished without a process unit shutdown, as defined in § 63.161.

(i) The seal system will be replaced;

(ii) A barrier fluid system will be installed;

(iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system; or

(iv) The compressor must be modified to permit connecting the compressor to a closed vent system.

(4) Existing process units shall be in compliance with the requirements of § 63.164 of subpart H no later than January 23, 1996, for any compressor meeting the criteria in paragraphs (e)(4)(i) through (e)(4)(iv) of this section.

(i) The compressor meets one or more of the criteria specified in paragraphs (e)(3)(i) through (iv) of this section;

(ii) The work can be accomplished without a process unit shutdown as defined in § 63.161;

(iii) The additional time is actually necessary due to the unavailability of parts beyond the control of the owner or operator; and

(iv) The owner or operator submits a request to the appropriate EPA Regional Office at the addresses listed in § 63.13 of subpart A of this part no later than May 10, 1995. The request shall include the information specified in paragraphs (e)(4)(iv)(A) through (e)(4)(iv)(E) of this section. Unless the EPA Regional Office objects to the request within 30 days after receipt, the request shall be deemed approved.

(A) The name and address of the owner or operator and the address of the existing source if it differs from the address of the owner or operator;

(B) The name, address, and telephone number of a contact person for further information;

(C) An identification of the process unit, and of the specific equipment for which additional compliance time is required;

(D) The reason compliance cannot reasonably be achieved by May 10, 1995; and

(E) The date by which the owner or operator expects to achieve compliance.

(5)(i) If compliance with the compressor provisions of § 63.164 of subpart H of this part cannot reasonably be achieved without a process unit shutdown, as defined in § 63.161 of subpart H, the owner or operator shall achieve compliance no later than April 22, 1996, except as provided in paragraph (e)(5)(ii) of this section. The owner or operator who elects to use this provision shall also comply with the requirements of § 63.192(m) of this subpart.

(ii) If compliance with the compressor provisions of § 63.164 of subpart H of this part cannot be achieved without replacing the compressor or recasting the distance piece, the owner or operator shall achieve compliance no later than April 22, 1997. The owner or operator who elects to use this provision shall also comply with the requirements of § 63.192(m) of this subpart.

(6) Existing sources shall be in compliance with the provisions of § 63.170 of subpart H no later than April 22, 1997.

(f) The provisions of subparts I and H of this part do not apply to research and development facilities or to bench-scale batch processes, regardless of whether the facilities or processes are

located at the same plant site as a process subject to the provisions of subpart I and H of this part.

(g)(1) If an additional process unit specified in paragraph (b) of this section is added to a plant site that is a major source as defined in Section 112(a) of the CAA, the addition shall be subject to the requirements for a new source in subparts H and I of this part if:

(i) It is an addition that meets the definition of construction in § 63.2 of subpart A of this part;

(ii) Such construction commenced after December 31, 1992; and

(iii) The addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP's, unless the Administrator establishes a lesser quantity.

(2) If any change is made to a process subject to this subpart, the change shall be subject to the requirements for a new source in subparts H and I of this part if:

(i) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part;

(ii) Such reconstruction commenced after December 31, 1992.

(3) If an additional process unit is added to a plant site or a change is made to a process unit and the addition or change is determined to be subject to the new source requirements according to paragraphs (g)(1) or (g)(2) of this section:

(i) The new or reconstructed source shall be in compliance with the new source requirements of subparts H and I of this part upon initial start-up of the new or reconstructed source or by April 22, 1994, whichever is later; and

(ii) The owner or operator of the new or reconstructed source shall comply with the reporting and recordkeeping requirements in subparts H and I of this part that are applicable to new sources. The applicable reports include, but are not limited to:

(A) Reports required by § 63.182(b), if not previously submitted, § 63.182 (c) and (d) of subpart H of this part; and

(B) Reports and notifications required by sections of subpart A of this part that are applicable to subparts H

and I of this part, as identified in § 63.192(a) of this subpart.

(4) If an additional process unit is added to a plant site, if a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, and if the addition or change is not subject to the new source requirements as determined according to paragraphs (g)(1) or (g)(2) of this section, the requirements in paragraphs (g)(4)(i) through (g)(4)(iii) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status required by § 63.182(c) of subpart H of this part.

(i) The added emission point(s) and any emission point(s) within the added or changed process unit are subject to the requirements of subparts H and I of this part for an existing source;

(ii) The added emission point(s) and any emission point(s) within the added or changed process unit shall be in compliance with subparts H and I of this part by the dates specified in paragraphs (g)(4)(ii)(A) or (g)(4)(ii)(B) of this section, as applicable.

(A) If a process unit is added to a plant site or an emission point(s) is added to an existing process unit, the added process unit or emission point(s) shall be in compliance upon initial start-up of the added process unit or emission point(s) or by April 22, 1997, whichever is later.

(B) If a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, if a compressor becomes subject to § 63.164 of subpart H, or if a deliberate operational process change causes equipment to become subject to subpart H of this part, the owner or operator shall be in compliance upon initial start-up or by April 22, 1997, whichever is later, unless the owner or operator demonstrates to the

Administrator that achieving compliance will take longer than making the change. The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule. The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

(iii) The owner or operator of a process unit or emission point that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and record-keeping requirements of subparts H and I of this part that are applicable to existing sources, including, but not limited to, the reports listed in paragraphs (g)(4)(iii)(A) and (g)(4)(iii)(B) of this section.

(A) Reports required by § 63.182 of subpart H of this part; and

(B) Reports and notifications required by sections of subpart A of this part that are applicable to subparts H and I of this part, as identified in § 63.192(a) of this subpart.

(h) *Rules stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of subpart I is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart I.

(i) *Sections stayed for reconsideration.* Notwithstanding any other provision of this subpart, the effectiveness of §§ 63.164 and 63.170 of subpart H is stayed from October 28, 1994, to April 24, 1995, only as applied to those sources subject to § 63.190(e)(2).

(j) If a change that does not meet the criteria in paragraph (g)(4) of this section is made to a process unit subject to subparts H and I of this part, and the change causes equipment to become subject to the provisions of subpart H of this part, then the owner or operator shall comply with the requirements of subpart H of this part for the equipment as expeditiously as practical, but in no event later than three

years after the equipment becomes subject.

(1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(2) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

[59 FR 19587, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 59 FR 53360, Oct. 24, 1994; 59 FR 54132, Oct. 28, 1994; 60 FR 5321, Jan. 27, 1995; 60 FR 18025, Apr. 10, 1995; 61 FR 7718, Feb. 29, 1996; 61 FR 31441, June 20, 1996; 62 FR 2792, Jan. 17, 1997]

§ 63.191 Definitions.

(a) The following terms as used in subparts I and H of this part shall have the meaning given them in subpart A of this part: Act, Administrator, approved permit program, commenced, compliance date, construction, effective date, EPA, equivalent emission limitation, existing source, Federally enforceable, hazardous air pollutant, lesser quantity, major source, malfunction, new source, owner or operator, performance evaluation, performance test, permit program, permitting authority, reconstruction, relevant standard, responsible official, run, standard conditions, State, and stationary source.

(b) All other terms used in this subpart and in subpart H of this part shall have the meaning given them in the Act and in this section. If the same term is defined in subpart A or H of this part and in this section, it shall have the meaning given in this section for purposes of subparts I and H of this part.

Bench-scale batch process means a batch process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Bottoms receiver means a tank that collects distillation bottoms before the

stream is sent for storage or for further downstream processing.

Butadiene-furfural cotrimer (R-11) means the product of reaction of butadiene with excess furfural in a liquid phase reactor. R-11 is usually used as an insect repellent and as a delousing agent for cows in the dairy industry.

Captafol® means the fungicide Captafol (([cis-N(1,1,2,2-tetrachloroethyl)-thio]-4-cylcohexene-1,2-dicarboximide). The category includes any production process units that store, react, or otherwise process 1,3-butadiene in the production of Captafol.

Captan® means the fungicide Captan. The production process typically includes, but is not limited to, the reaction of tetrahydrophthalimide and perchloromethyl mercaptan with caustic.

Chlorinated paraffins means dry chlorinated paraffins, which are mainly straight-chain, saturated hydrocarbons. The category includes, but is not limited to, production of chlorinated paraffins by passing gaseous chlorine into a paraffin hydrocarbon or by chlorination by using solvents, such as carbon tetrachloride, under reflux.

Chlorothalonil means the agricultural fungicide, bactericide and nematocide Chlorothalonil (Daconil). The category includes any process units utilized to dissolve tetrachlorophthalic acid chloride in an organic solvent, typically carbon tetrachloride, with the subsequent addition of ammonia.

Dacthal™ means the pre-emergent herbicide Dacthal™, also known as DCPA, DAC, and dimethyl ester 2,3,5,6-tetrachloroterephthalic acid. The category includes, but is not limited to, chlorination processes and the following production process units: photochlorination reactors, thermal chlorination reactors, and condensers.

Ethylidene Norbornene means the diene with CAS number 16219-75-3. Ethylidene norbornene is used in the production of ethylene-propylene rubber products.

Hypalon™ (chlorosulfonated polyethylene) means a synthetic rubber produced by reacting polyethylene

with chloric and sulfur dioxide, transforming the thermoplastic polyethylene into a vulcanized elastomer. The reaction is conducted in a solvent (carbon tetrachloride) reaction medium.

Initial start-up means the first time a new or reconstructed source begins production. Initial start-up does not include operation solely for testing equipment. For purposes of subpart H of this part, initial start-up does not include subsequent start-ups (as defined in § 63.161 of subpart H of this part) of process units (as defined in § 63.161 of subpart H of this part) following malfunctions or process unit shutdowns.

In organic hazardous air pollutant service or in organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of the designated organic HAP's listed in § 63.190(b) of this subpart.

Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene (MABS) Resins means styrenic polymers containing methyl methacrylate, acrylonitrile, 1,3-butadiene, and styrene. The MABS copolymers are prepared by dissolving or dispersing polybutadiene rubber in a mixture of methyl methacrylate-acrylonitrile-styrene and butadiene monomer. The graft polymerization is carried out by a bulk or a suspension process.

Methyl Methacrylate-Butadiene-Styrene (MBS) Resins means styrenic polymers containing methyl methacrylate, 1,3-butadiene, and styrene. Production of MBS terpolymers is achieved using an emulsion process in which methyl methacrylate and styrene are grafted onto a styrene-butadiene rubber.

On-site or On site means, with respect to records required to be maintained by this subpart, that the records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the process unit to which the records pertain, or storage in central files elsewhere at the major source.

Oxybisphenoxarsine (OBPA)/1,3-Diisocyanate means the chemical with CAS number 58-36-6. The chemical is primarily used for fungicidal and bac-

tericidal protection of plastics. The process uses chloroform as a solvent.

Pharmaceutical production process means a process that synthesizes one or more pharmaceutical intermediate or final products using carbon tetrachloride or methylene chloride as a reactant or process solvent. Pharmaceutical production process does not mean process operations involving formulation activities, such as tablet coating or spray coating of drug particles, or solvent recovery or waste management operations.

Polybutadiene production means a process that produces polybutadiene through the polymerization of 1,3-butadiene.

Polycarbonates means a special class of polyester formed from any dihydroxy compound and any carbonate diester or by ester interchange. Polycarbonates may be produced by solution or emulsion polymerization, although other methods may be used. A typical method for the manufacture of polycarbonates includes the reaction of bisphenol-A with phosgene in the presence of pyridine to form a polycarbonate. Methylene chloride is used as a solvent in this polymerization reaction.

Polysulfide rubber means a synthetic rubber produced by reaction of sodium sulfide and p-dichlorobenzene at an elevated temperature in a polar solvent. This rubber is resilient and has low temperature flexibility.

Process Unit means the group of equipment items used to process raw materials and to manufacture a product. For the purposes of this subpart, process unit includes all unit operations and associated equipment (e.g., reactors and associated product separators and recovery devices), associated unit operations (e.g., extraction columns), any feed and product storage vessels, and any transfer racks for distribution of final product.

Research and development facility means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture

of products except in a de minimis manner.

Source means the collection of equipment listed in § 63.190(d) to which this subpart applies as determined by the criteria in § 63.190. For purposes of subparts H and I of this part, the term *affected source* as used in subpart A of this part has the same meaning as the term *source* defined here.

Styrene-butadiene rubber production means a process that produces styrene-butadiene copolymers, whether in solid (elastomer) or emulsion (latex) form.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

Symmetrical tetrachloropyridine means the chemical with CAS number 2402–79–1.

*Tordon acid*TM means the synthetic herbicide 4-amino-3,5,6-trichloropicolinic acid, picloram. The category includes, but is not limited to, chlorination processes utilized in TordonTM acid production.

[59 FR 19587, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 60 FR 18026, 18030, Apr. 10, 1995; 61 FR 31442, June 20, 1996; 62 FR 2792, Jan. 17, 1997]

§ 63.192 Standard.

(a)(1) The owner or operator of a source subject to this subpart shall comply with the requirements of subpart H of this part for the processes and designated organic HAP's listed in § 63.190(b) of this subpart.

(2) The owner or operator of a pharmaceutical production process subject to this subpart may define a process unit as a set of operations, within a source, producing a product, as all operations collocated within a building or structure or as all affected operations at the source.

(b) All provisions in §§ 63.1 through 63.15 of subpart A of this part which apply to owners and operators of sources subject to subparts I and H of this part, are:

(1) The applicability provisions of § 63.1 (a)(1), (a)(2), (a)(10), (a)(12) through (a)(14);

(2) The definitions of § 63.2 unless changed or modified by specific entry in § 63.191 or § 63.161;

(3) The units and abbreviations in § 63.3;

(4) The prohibited activities and circumvention provisions of § 63.4 (a)(1), (a)(2), (a)(3), (a)(5), and (b);

(5) The construction and reconstruction provisions of § 63.5(a), (b)(1), (b)(3), (d) (except the review is limited to the equipment subject to the provisions of subpart H), (e), and (f);

(6)(i) The compliance with standards and maintenance requirements of § 63.6(a), (b)(3), (c)(5), (e), (i)(1), (i)(2), (i)(4)(i)(A), (i)(6)(i), (i)(8) through (i)(10), (i)(12) through (i)(14), (i)(16), and (j);

(ii) The operational and maintenance requirements of § 63.6(e). The startup, shutdown, and malfunction plan requirement of § 63.6(e)(3) is limited to control devices subject to the provisions of subpart H of part 63 and is optional for other equipment subject to subpart H. The startup, shutdown, and malfunction plan may include written procedures that identify conditions that justify a delay of repair.

(7) With respect to flares, the performance testing requirements of § 63.7(a)(3), (d), (e)(1), (e)(2), (e)(4), and (h);

(8) The notification requirements of § 63.9 (a)(1), (a)(3), (a)(4), (b)(1)(i), (b)(4), (b)(5) (except, use the schedule specified in subpart H), (c), (d), and (i);

(9) The recordkeeping and reporting requirements of § 63.10(a) and (f);

(10) The control device requirements of § 63.11(b); and

(11) The provisions of § 63.12 through § 63.15.

(c) Initial performance tests and initial compliance determinations shall be required only as specified in subpart H of this part.

(1) Performance tests and compliance determinations shall be conducted according to the applicable sections of subpart H.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present during the test.

NOTE: This requirement does not apply to equipment subject to monitoring using Method 21 of part 60, appendix A.

(3) Performance tests shall be conducted according to the provisions of § 63.7(e) of subpart A of this part, except that performance tests shall be conducted at maximum representative operating conditions for the process. During the performance test, an owner or operator may operate the control or recovery device at maximum or minimum representative operating conditions for monitored control or recovery device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable subpart, or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(d) An application for approval of construction or reconstruction, 40 CFR 63.5 of this chapter, will not be required if:

(1) The new process unit complies with the applicable standards in § 63.162 or § 63.178 of subpart H of this part; and

(2) In the next semiannual report required by § 63.182(d) of subpart H of this part, the information in § 63.182(c) of subpart H of this part is reported.

(e) If an owner or operator of a process plans to eliminate the use or production of all HAP's that cause the process to be subject to the provisions of subparts I and H of this part no later than 18 months after April 22, 1994, the owner or operator shall submit to the Administrator a brief description of the change, identify the HAP's eliminated, and the expected date of cessation of operation of the current process, by no later than January 23, 1995.

(f) Each owner or operator of a source subject to subparts I and H of this part shall keep copies of all applicable reports and records required by subpart H for at least 2 years, except as otherwise specified in subpart H. If an owner or operator submits copies of reports to the applicable EPA Regional Office, the owner or operator is not required to maintain copies of reports. If the EPA Regional Office has waived the requirement of § 63.10(a)(4)(ii) for submittal of copies of reports, the owner or

operator is not required to maintain copies of reports.

(1) All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent 6 months of records shall be retained on site or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request.

(2) The owner or operator subject to subparts I and H of this part shall keep the records specified in this paragraph, as well as records specified in subpart H of this part.

(i) Records of the occurrence and duration of each start-up, shutdown, and malfunction of operation of a process subject to this subpart as specified in § 63.190(b) of this subpart.

(ii) Records of the occurrence and duration of each malfunction of air pollution control equipment or continuous monitoring systems used to comply with subparts I and H of this part.

(iii) For each start-up, shutdown, and malfunction, records that the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. These records may take the form of a "checklist," or other form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan for the event.

(g) All reports required under subpart H shall be sent to the Administrator at the addresses listed in § 63.13 of subpart A of this part.

(1) Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(h) If, in the judgment of the Administrator, an alternative means of emission limitation will achieve a reduction in organic HAP emissions at least equivalent to the reduction in organic HAP emissions from that source achieved under any design, equipment, work practice, or operational standards

in subpart H of this part, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(1) The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under paragraph (h) of this section shall be published only after public notice and an opportunity for a hearing.

(3) Any person seeking permission to use an alternative means of compliance under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

(i) Each owner or operator of a source subject to this subpart shall obtain a permit under 40 CFR part 70 or part 71 from the appropriate permitting authority.

(1) If EPA has approved a State operating permit program under 40 CFR part 70, the permit shall be obtained from the State authority.

(2) If the State operating permit program has not been approved, the source shall apply to the EPA regional office pursuant to 40 CFR part 71.

(j) The requirements in subparts I and H of this part are Federally enforceable under section 112 of the Act on and after the dates specified in § 63.190(d) of this subpart.

(k) The owner or operator of a process unit which meets the criteria of § 63.190 (c), shall comply with the requirements of either paragraph (k)(1) or (k)(2) of this section.

(1) Retain information, data, and analysis used to determine that the process unit does not have the designated organic hazardous air pollutant present in the process. Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(2) When requested by the Administrator, demonstrate that the chemical manufacturing process unit does not have the designated organic hazardous air pollutant present in the process.

(l) To qualify for the exemption specified in § 63.190(b)(7) of this subpart, the owner or operator shall maintain the documentation of the information required pursuant to § 63.190(b)(7)(i), and documentation of any update of this information requested by the EPA Regional Office, and shall provide the documentation to the EPA Regional Office upon request. The EPA Regional Office will notify the owner or operator, after reviewing such documentation, whether, in the EPA Regional Office's judgement, the source does not qualify for the exemption specified in § 63.190(b)(7) of this subpart. In such cases, compliance with this subpart shall be required no later than 90 days after the date of such notification by the EPA Regional Office.

(m) An owner or operator who elects to use the compliance extension provisions of § 63.190(e)(5) (i) or (ii) shall submit a compliance extension request to the appropriate EPA Regional Office no later than May 10, 1995. The request shall contain the information specified in § 63.190(e)(4)(iv) and the reason compliance cannot reasonably be achieved without a process unit shutdown, as defined in § 63.161 of subpart H or replacement of the compressor or recasting of the distance piece.

[59 FR 19587, Apr. 22, 1994, as amended at 59 FR 48178, Sept. 20, 1994; 60 FR 18026, 18030, Apr. 10, 1995; 61 FR 31442, June 20, 1996; 62 FR 2793, Jan. 17, 1997]

§ 63.193 Delegation of authority.

In delegating implementation and enforcement authority to a State under section 112(l) of the Clean Air Act, the authority for § 63.177 of subpart H of this part shall be retained by the Administrator and not transferred to a State.

[62 FR 2793, Jan. 17, 1997]

Subparts J–K [Reserved]

Subpart L—National Emission Standards for Coke Oven Batteries

SOURCE: 58 FR 57911, Oct. 27, 1993, unless otherwise noted.

§ 63.300 Applicability.

(a) Unless otherwise specified in §§ 63.306, 63.307, and 63.311, the provisions of this subpart apply to existing by-product coke oven batteries at a coke plant and to existing nonrecovery coke oven batteries at a coke plant on and after the following dates:

(1) December 31, 1995, for existing by-product coke oven batteries subject to emission limitations in § 63.302(a)(1) or existing nonrecovery coke oven batteries subject to emission limitations in § 63.303(a);

(2) January 1, 2003, for existing by-product coke oven batteries subject to emission limitations in § 63.302(a)(2);

(3) November 15, 1993, for existing by-product and nonrecovery coke oven batteries subject to emission limitations in § 63.304(b)(1) or 63.304(c);

(4) January 1, 1998, for existing by-product coke oven batteries subject to emission limitations in § 63.304(b)(2) or 63.304(b)(7); and

(5) January 1, 2010, for existing by-product coke oven batteries subject to emission limitations in § 63.304(b)(3) or 63.304(b)(7).

(b) The provisions for new sources in §§ 63.302(b), 63.302(c), and 63.303(b) apply to each greenfield coke oven battery and to each new or reconstructed coke oven battery at an existing coke plant if the coke oven battery results in an increase in the design capacity of the coke plant as of November 15, 1990, (including any capacity qualifying under § 63.304(b)(6), and the capacity of any coke oven battery subject to a construction permit on November 15, 1990, which commenced operation before October 27, 1993.

(c) The provisions of this subpart apply to each brownfield coke oven battery, each padup rebuild, and each cold-idle coke oven battery that is restarted.

(d) The provisions of §§ 63.304(b)(2)(i)(A) and 63.304(b)(3)(i) apply to each foundry coke producer as follows:

(1) A coke oven battery subject to § 63.304(b)(2)(i)(A) or § 63.304(b)(3)(i) must be a coke oven battery that on January 1, 1992, was owned or operated by a foundry coke producer; and

(2)(i) A coke oven battery owned or operated by an integrated steel pro-

ducer on January 1, 1992, and listed in paragraph (d)(2)(ii) of this section, that was sold to a foundry coke producer before November 15, 1993, shall be deemed for the purposes of paragraph (d)(1) of this section to be owned or operated by a foundry coke producer on January 1, 1992.

(ii) The coke oven batteries that may qualify under this provision are the following:

(A) The coke oven batteries at the Bethlehem Steel Corporation's Lackawanna, New York facility; and

(B) The coke oven batteries at the Rouge Steel Company's Dearborn, Michigan facility.

(e) The emission limitations set forth in this subpart shall apply at all times except during a period of startup, shutdown, or malfunction. The startup period shall be determined by the Administrator and shall not exceed 180 days.

(f) After October 28, 1992, rules of general applicability promulgated under section 112 of the Act, including the General Provisions, may apply to coke ovens provided that the topic covered by such a rule is not addressed in this subpart.

§ 63.301 Definitions.

Terms used in this subpart are defined in the Act or in this section as follows:

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this subpart or its designated agent).

Brownfield coke oven battery means a new coke oven battery that replaces an existing coke oven battery or batteries with no increase in the design capacity of the coke plant as of November 15, 1990 (including capacity qualifying under § 63.304(b)(6), and the capacity of any coke oven battery subject to a construction permit on November 15, 1990, which commenced operation before October 27, 1993).

Bypass/bleeder stack means a stack, duct, or offtake system that is opened to the atmosphere and used to relieve excess pressure by venting raw coke oven gas from the collecting main to the atmosphere from a by-product coke

oven battery, usually during emergency conditions.

By-product coke oven battery means a source consisting of a group of ovens connected by common walls, where coal undergoes destructive distillation under positive pressure to produce coke and coke oven gas, from which by-products are recovered. Coke oven batteries in operation as of April 1, 1992, are identified in appendix A to this subpart.

Certified observer means a visual emission observer, certified under (if applicable) Method 303 and Method 9 (if applicable) and employed by the Administrator, which includes a delegated enforcement agency or its designated agent. For the purpose of notifying an owner or operator of the results obtained by a certified observer, the person does not have to be certified.

Charge or charging period means, for a by-product coke oven battery, the period of time that commences when coal begins to flow into an oven through a topside port and ends when the last charging port is recapped. For a non-recovery coke oven battery, *charge or charging period* means the period of time that commences when coal begins to flow into an oven and ends when the push side door is replaced.

Coke oven battery means either a by-product or nonrecovery coke oven battery.

Coke oven door means each end enclosure on the pusher side and the coking side of an oven. The chuck, or leveler-bar, door is part of the pusher side door. A *coke oven door* includes the entire area on the vertical face of a coke oven between the bench and the top of the battery between two adjacent buckstays.

Cold-idle coke oven battery means an existing coke oven battery that has been shut down, but is not dismantled.

Collecting main means any apparatus that is connected to one or more offtake systems and that provides a passage for conveying gases under positive pressure from the by-product coke oven battery to the by-product recovery system.

Collecting main repair means any measure to stop a collecting main leak on a long-term basis. A repair measure in general is intended to restore the in-

tegrity of the collecting main by returning the main to approximately its design specifications or its condition before the leak occurred. A repair measure may include, but is not limited to, replacing a section of the collecting main or welding the source of the leak.

Consecutive charges means charges observed successively, excluding any charge during which the observer's view of the charging system or topside ports is obscured.

Design capacity means the original design capacity of a coke oven battery, expressed in megagrams per year of furnace coke.

Foundry coke producer means a coke producer that is not and was not on January 1, 1992, owned or operated by an integrated steel producer and had on January 1, 1992, an annual design capacity of less than 1.25 million megagrams per year (not including any capacity satisfying the requirements of § 63.300(d)(2) or § 63.304(b)(6)).

Greenfield coke oven battery means a coke oven battery for which construction is commenced at a plant site (where no coke oven batteries previously existed) after December 4, 1992.

Integrated steel producer means a company or corporation that produces coke, uses the coke in a blast furnace to make iron, and uses the iron to produce steel. These operations may be performed at different plant sites within the corporation.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures caused in part by poor maintenance or careless operation are not *malfunctions*.

New shed means a shed for which construction commenced after September 15, 1992. The shed at Bethlehem Steel Corporation's Bethlehem plant on Battery A is deemed not to be a *new shed*.

Nonrecovery coke oven battery means a source consisting of a group of ovens connected by common walls and operated as a unit, where coal undergoes destructive distillation under negative pressure to produce coke, and which is designed for the combustion of the

coke oven gas from which by-products are not recovered.

Offtake system means any individual oven apparatus that is stationary and provides a passage for gases from an oven to a coke oven battery collecting main or to another oven. Offtake system components include the standpipe and standpipe caps, goosenecks, stationary jumper pipes, mini-standpipes, and standpipe and gooseneck connections.

Oven means a chamber in the coke oven battery in which coal undergoes destructive distillation to produce coke.

Padup rebuild means a coke oven battery that is a complete reconstruction of an existing coke oven battery on the same site and pad without an increase in the design capacity of the coke plant as of November 15, 1990 (including any capacity qualifying under § 63.304(b)(6)), and the capacity of any coke oven battery subject to a construction permit on November 15, 1990, which commenced operation before October 27, 1993. The Administrator may determine that a project is a *padup rebuild* if it effectively constitutes a replacement of the battery above the pad, even if some portion of the brickwork above the pad is retained.

Pushing, for the purposes of § 63.305, means that coke oven operation that commences when the pushing ram starts into the oven to push out coke that has completed the coking cycle and ends when the quench car is clear of the coke side shed.

Run means the observation of visible emissions from topside port lids, offtake systems, coke oven doors, or the charging of a coke oven that is made in accordance with and is valid under Methods 303 or 303A in appendix A to this part.

Shed means a structure for capturing coke oven emissions on the coke side or pusher side of the coke oven battery, which routes the emissions to a control device or system.

Short coke oven battery means a coke oven battery with ovens less than 6 meters in height.

Shutdown means the operation that commences when pushing has occurred on the first oven with the intent of pushing the coke out of all of the ovens

in a coke oven battery without adding coal, and ends when all of the ovens of a coke oven battery are empty of coal or coke.

Standpipe cap means an apparatus used to cover the opening in the gooseneck of an offtake system.

Startup means that operation that commences when the coal begins to be added to the first oven of a coke oven battery that either is being started for the first time or that is being restarted and ends when the doors have been adjusted for maximum leak reduction and the collecting main pressure control has been stabilized. Except for the first startup of a coke oven battery, a startup cannot occur unless a shutdown has occurred.

Tall coke oven battery means a coke oven battery with ovens 6 meters or more in height.

Temporary seal means any measure, including but not limited to, application of luting or packing material, to stop a collecting main leak until the leak is repaired.

Topside port lid means a cover, removed during charging or decarbonizing, that is placed over the opening through which coal can be charged into the oven of a by-product coke oven battery.

§ 63.302 Standards for by-product coke oven batteries.

(a) Except as provided in § 63.304 or § 63.305, on and after the dates specified in this paragraph, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere, coke oven emissions from each affected existing by-product coke oven battery that exceed any of the following emission limitations or requirements:

(1) On and after December 31, 1995;

(i) For coke oven doors;

(A) 6.0 percent leaking coke oven doors for each tall by-product coke oven battery, as determined according to the procedures in § 63.309(d)(1); and

(B) 5.5 percent leaking coke oven doors for each short by-product coke oven battery, as determined according to the procedures in § 63.309(d)(1);

(ii) 0.6 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 3.0 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(2) On and after January 1, 2003, unless the Administrator promulgates more stringent limits pursuant to section 112(f) of the Act;

(i) 5.5 percent leaking coke oven doors for each tall by-product coke oven battery, as determined by the procedures in § 63.309(d)(1); and

(ii) 5.0 percent leaking coke oven doors for each short by-product coke oven battery, as determined by the procedures in § 63.309(d)(1).

(b) Except as provided in paragraph (c) of this section, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere, coke oven emissions from a by-product coke oven battery subject to the applicability requirements in § 63.300(b) that exceed any of the following emission limitations:

(1) 0.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1);

(2) 0.0 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(3) 0.0 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(4) 34 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(c) The emission limitations in paragraph (b) of this section do not apply to the owner or operator of a by-product coke oven battery that utilizes a new recovery technology, including but not limited to larger size ovens, operation under negative pressure, and processes with emission points different from those regulated under this subpart. An owner or operator constructing a new by-product coke oven battery or reconstructing an existing by-product recovery battery that utilizes a new recovery technology shall:

(1) Notify the Administrator of the intention to do so, as required in § 63.311(c); and

(2) Submit, for the determination under section 112(g)(2)(B) of the Act, and as part of the application for per-

mission to construct or reconstruct, all information and data requested by the Administrator for the determination of applicable emission limitations and requirements for that by-product coke oven battery.

(d) Emission limitations and requirements applied to each coke oven battery utilizing a new recovery technology shall be less than the following emission limitations or shall result in an overall annual emissions rate for coke oven emissions for the battery that is lower than that obtained by the following emission limitations:

(1) 4.0 percent leaking coke oven doors on tall by-product coke oven batteries, as determined by the procedures in § 63.309(d)(1);

(2) 3.3 percent leaking coke oven doors on short by-product coke oven batteries, as determined by the procedures in § 63.309(d)(1);

(3) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1);

(4) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1); and

(5) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

§ 63.303 Standards for nonrecovery coke oven batteries.

(a) Except as provided in § 63.304, on and after December 31, 1995, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from each affected existing nonrecovery coke oven battery that exceed any of the following emission limitations or requirements:

(1) For coke oven doors;

(i) 0.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1); or

(ii) The owner or operator shall monitor and record, once per day for each day of operation, the pressure in each oven or in a common battery tunnel to ensure that the ovens are operated under a negative pressure.

(2) For charging operations, the owner or operator shall implement, for each day of operation, the work practices specified in § 63.306(b)(6) and

record the performance of the work practices as required in § 63.306(b)(7).

(b) No owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from each affected new non-recovery coke oven battery subject to the applicability requirements in § 63.300(b) that exceed any of the following emission limitations or requirements:

(1) For coke oven doors;

(i) 0.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1); or

(ii) The owner or operator shall monitor and record, once per day for each day of operation, the pressure in each oven or in a common battery tunnel to ensure that the ovens are operated under a negative pressure;

(2) For charging operations, the owner or operator shall install, operate, and maintain an emission control system for the capture and collection of emissions in a manner consistent with good air pollution control practices for minimizing emissions from the charging operation;

(3) 0.0 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1) (if applicable to the new nonrecovery coke oven battery); and

(4) 0.0 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1) (if applicable to the new nonrecovery coke oven battery).

§ 63.304 Standards for compliance date extension.

(a) An owner or operator of an existing coke oven battery (including a cold-idle coke oven battery), a padup rebuild, or a brownfield coke oven battery, may elect an extension of the compliance date for emission limits to be promulgated pursuant to section 112(f) of the Act in accordance with section 112(i)(8). To receive an extension of the compliance date from January 1, 2003, until January 1, 2020, the owner or operator shall notify the Administrator as described in § 63.311(c) that the battery will comply with the emission limitations and requirements in this section in lieu of the applicable emission limitations in § 63.302 or 63.303.

(b) Except as provided in paragraphs (b)(4), (b)(5), and (b)(7) of this section and in § 63.305, on and after the dates specified in this paragraph, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from a by-product coke oven battery that exceed any of the following emission limitations:

(1) On and after November 15, 1993;

(i) 7.0 percent leaking coke oven doors, as determined by the procedures in § 63.309(d)(1);

(ii) 0.83 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 4.2 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(2) On and after January 1, 1998;

(i) For coke oven doors:

(A) 4.3 percent leaking coke oven doors for each tall by-product coke oven battery and for each by-product coke oven battery owned or operated by a foundry coke producer, as determined by the procedures in § 63.309(d)(1); and

(B) 3.8 percent leaking coke oven doors on each by-product coke oven battery not subject to the emission limitation in paragraph (b)(2)(i)(A) of this section, as determined by the procedures in § 63.309(d)(1);

(ii) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(3) On and after January 1, 2010, unless the Administrator promulgates more stringent limits pursuant to section 112(i)(8)(C) of the Act;

(i) 4.0 percent leaking coke oven doors on each tall by-product coke oven battery and for each by-product coke oven battery owned or operated by a foundry coke producer, as determined by the procedures in § 63.309(d)(1); and

(ii) 3.3 percent leaking coke oven doors for each by-product coke oven battery not subject to the emission limitation in paragraph (b)(3)(i) of this section, as determined by the procedures in § 63.309(d)(1).

(4) No owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from a brownfield or padup rebuild by-product coke oven battery, other than those specified in paragraph (b)(4)(v) of this section, that exceed any of the following emission limitations:

(i) For coke oven doors;

(A) 4.0 percent leaking coke oven doors for each tall by-product coke oven battery, as determined by the procedures in § 63.309(d)(1); and

(B) 3.3 percent leaking coke oven doors on each short by-product coke oven battery, as determined by the procedures in § 63.309(d)(1);

(ii) 0.4 percent leaking topside port lids, as determined by the procedures in § 63.309(d)(1);

(iii) 2.5 percent leaking offtake system(s), as determined by the procedures in § 63.309(d)(1); and

(iv) 12 seconds of visible emissions per charge, as determined by the procedures in § 63.309(d)(2).

(v) The requirements of paragraph (b)(4) of this section shall not apply and the requirements of paragraphs (b)(1), (b)(2), and (b)(3) of this section do apply to the following brownfield or padup rebuild coke oven batteries:

(A) Bethlehem Steel-Burns Harbor, Battery No. 2;

(B) National Steel-Great Lakes, Battery No. 4; and

(C) Koppers-Woodward, Battery No. 3.

(vi) To retain the exclusion provided in paragraph (b)(4)(v) of this section, a coke oven battery specified in paragraph (b)(4)(v) of this section shall commence construction not later than July 1, 1996, or 1 year after obtaining a construction permit, whichever is earlier.

(5) The owner or operator of a cold-idle coke oven battery that shut down on or after November 15, 1990, shall comply with the following emission limitations:

(i) For a brownfield coke oven battery or a padup rebuild coke oven battery, coke oven emissions shall not ex-

ceed the emission limitations in paragraph (b)(4) of this section; and

(ii) For a cold-idle battery other than a brownfield or padup rebuild coke oven battery, coke oven emissions shall not exceed the emission limitations in paragraphs (b)(1) through (b)(3) of this section.

(6) The owner or operator of a cold-idle coke oven battery that shut down prior to November 15, 1990, shall submit a written request to the Administrator to include the battery in the design capacity of a coke plant as of November 15, 1990. A copy of the request shall also be sent to Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. The Administrator will review and approve or disapprove a request according to the following procedures:

(i) Requests will be reviewed for completeness in the order received. A complete request shall include:

(A) Battery identification;

(B) Design information, including the design capacity and number and size of ovens; and

(C) A brief description of the owner or operator's plans for the cold-idle battery, including a statement whether construction of a padup rebuild or a brownfield coke oven battery is contemplated.

(ii) A complete request shall be approved if the design capacity of the battery and the design capacity of all previous approvals does not exceed the capacity limit in paragraph (b)(6)(iii) of this section.

(iii) The total nationwide coke capacity of coke oven batteries that receive approval under paragraph (b)(6) of this section shall not exceed 2.7 million Mg/yr.

(iv) If a construction permit is required, an approval shall lapse if a construction permit is not issued within 3 years of the approval date, or if the construction permit lapses.

(v) If a construction permit is not required, an approval will lapse if the battery is not restarted within 2 years of the approval date.

The owner or operator of a by-product coke oven battery with fewer than 30 ovens may elect to comply with an

emission limitation of 2 or fewer leaking coke oven doors, as determined by the procedures in § 63.309(d)(4), as an alternative to the emission limitation for coke oven doors in paragraphs (b)(2)(i), (b)(3) (i) through (ii), (b)(4)(i), (b)(5), and (b)(6) of this section.

(c) On and after November 15, 1993, no owner or operator shall cause to be discharged or allow to be discharged to the atmosphere coke oven emissions from an existing nonrecovery coke oven battery that exceed any of the emission limitations or requirements in § 63.303(a).

(d) Each owner or operator of an existing coke oven battery qualifying for a compliance date extension pursuant to this section shall make available, no later than January 1, 2000, to the surrounding communities the results of any risk assessment performed by the Administrator to determine the appropriate level of any emission standard established by the Administrator according to section 112(f) of the Act.

§ 63.305 Alternative standards for coke oven doors equipped with sheds.

(a) The owner or operator of a new or existing coke oven battery equipped with a shed for the capture of coke oven emissions from coke oven doors and an emission control device for the collection of the emissions may comply with an alternative to the applicable visible emission limitations for coke oven doors in §§ 63.302 and 63.304 according to the procedures and requirements in this section.

(b) To qualify for approval of an alternative standard, the owner or operator shall submit to the Administrator a test plan for the measurement of emissions. A copy of the request shall also be sent to the Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711. The plan shall describe the procedures to be used for the measurement of particulate matter; the parameters to be measured that affect the shed exhaust rate (e.g., damper settings, fan power) and the procedures for measuring such parameters; and if applicable under paragraph (c)(5)(ii) of this section, the procedures to be used for the measurement of benzene soluble organics, ben-

zene, toluene, and xylene emitted from the control device for the shed. The owner or operator shall notify the Administrator at least 30 days before any performance test is conducted.

(c) A complete test plan is deemed approved if no disapproval is received within 60 days of the submittal to the Administrator. After approval of the test plan, the owner or operator shall;

(1) Determine the efficiency of the control device for removal of particulate matter by conducting measurements at the inlet and the outlet of the emission control device using Method 5 in appendix A to part 60 of this chapter, with the filter box operated at ambient temperature and in a manner to avoid condensation, with a backup filter;

(2) Measure the visible emissions from coke oven doors that escape capture by the shed using Method 22 in appendix A to part 60 of this chapter. For the purpose of approval of an alternative standard, no visible emissions may escape capture from the shed.

(i) Visible emission observations shall be taken during conditions representative of normal operations, except that pushing shall be suspended and pushing emissions shall have cleared the shed; and

(ii) Method 22 observations shall be performed by an observer certified according to the requirements of Method 9 in appendix A to part 60 of this chapter. The observer shall allow pushing emissions to be evacuated (typically 1 to 2 minutes) before making observations;

(3) Measure the opacity of emissions from the control device using Method 9 in appendix A to part 60 of this chapter during conditions representative of normal operations, including pushing; and

(i) If the control device has multiple stacks, the owner or operator shall use an evaluation based on visible emissions and opacity to select the stack with the highest opacity for testing under this section;

(ii) The highest opacity, expressed as a 6-minute average, shall be used as the opacity standard for the control device.

(4) Thoroughly inspect all compartments of each air cleaning device prior

to the performance test for proper operation and for changes that signal the potential for malfunction, including the presence of tears, holes, and abrasions in filter bags; damaged seals; and for dust deposits on the clean side of bags; and

(5) Determine the allowable percent leaking doors under the shed using either of the following procedures:

(i) Calculate the allowable percent leaking doors using the following equation:

$$PLD = \left[\frac{1.4(PLD_{std})^{2.5}}{(1.4 - \text{eff} / 100)} \right]^{0.4} \quad (\text{Eq. 1})$$

where

PLD=Allowable percent leaking doors for alternative standard.

PLD_{std}=Applicable visible emission limitation of percent leaking doors under this subpart that would otherwise apply to the coke oven battery, converted to the single-run limit according to Table 1.

eff=Percent control efficiency for particulate matter for emission control device as determined according to paragraph (c)(1) of this section.

Table 1—CONVERSION TO SINGLE-RUN LIMIT

30-run limit	Single-pass limit (98 percent level)
7.0	11.0
6.0	9.5
5.5	8.7
5.0	8.1
4.3	7.2
4.0	6.7
3.8	6.4
3.3	5.8

or;

(ii) Calculate the allowable percent leaking doors using the following procedures:

(A) Measure the total emission rate of benzene, toluene, and xylene exiting the control device using Method 18 in appendix A to part 60 of this chapter and the emission rate of benzene soluble organics entering the control device as described in the test plan submitted pursuant to paragraph (b) of this section; or

(B) Measure benzene, toluene, xylene, and benzene soluble organics in the gas in the collector main as described in the test plan submitted pursuant to paragraph (b) of this section; and

(C) Calculate the ratio (R) of benzene, toluene, and xylene to benzene soluble organics for the gas in the collector main, or as the sum of the outlet emission rates of benzene, toluene, and xylene, divided by the emission rate of benzene soluble organics as measured at the inlet to the control device; and

(D) Calculate the allowable percent leaking doors limit under the shed using the following equation:

$$PLD = \left[\frac{(R + 1)(PLD_{std})^{2.5}}{(R + 1 - \text{eff} / 100)} \right]^{0.4} \quad (\text{Eq. 2})$$

where

R=Ratio of measured emissions of benzene, toluene, and xylene to measured emissions of benzene soluble organics.

(iii) If the allowable percent leaking coke oven doors is calculated to exceed 15 percent leaking coke oven doors under paragraphs (c)(5)(i) or (c)(5)(ii) of this section, the owner or operator shall use 15 percent leaking coke oven doors for the purposes of this section.

(6) Monitor the parameters that affect the shed exhaust flow rate.

(7) The owner or operator may request alternative sampling procedures to those specified in paragraph (c)(5)(ii) (A) and (B) of this section by submitting details on the procedures and the rationale for their use to the Administrator. Alternative procedures shall not be used without approval from the Administrator.

(8) The owner or operator shall inform the Administrator of the schedule for conducting testing under the approved test plan and give the Administrator the opportunity to observe the tests.

(d) After calculating the alternative standard for allowable percent leaking coke oven doors, the owner or operator shall submit the following information to the Administrator:

(1) Identity of the coke oven battery;

(2) Visible emission limitation(s) for percent leaking doors currently applicable to the coke oven battery under

this subpart and known future limitations for percent leaking coke oven doors;

(3) A written report including:

(i) Appropriate measurements and calculations used to derive the allowable percent leaking coke oven doors requested as the alternative standard;

(ii) Appropriate visible emission observations for the shed and opacity observations for the control device for the shed, including an alternative opacity standard, if applicable, as described in paragraph (c)(3) of this section based on the highest 6-minute average; and

(iii) The parameter or parameters (e.g., fan power, damper position, or other) to be monitored and recorded to demonstrate that the exhaust flow rate measured during the test required by paragraph (c)(1) of this section is maintained, and the monitoring plan for such parameter(s).

(iv) If the application is for a new shed, one of the following demonstrations:

(A) A demonstration, using modeling procedures acceptable to the Administrator, that the expected concentrations of particulate emissions (including benzene soluble organics) under the shed at the bench level, when the proposed alternative standard was being met, would not exceed the expected concentrations of particulate emissions (including benzene soluble organics) if the shed were not present, the regulations under this subpart were met, and the battery was in compliance with federally enforceable limitations on pushing emissions; or

(B) A demonstration that the shed (including the evacuation system) has been designed in accordance with generally accepted engineering principles for the effective capture and control of particulate emissions (including benzene soluble organics) as measured at the shed's perimeter, its control device, and at the bench level.

(e) The Administrator will review the information and data submitted according to paragraph (d) of this section and may request additional information and data within 60 days of receipt of a complete request.

(1) Except for applications subject to paragraph (e)(3) of this section, the Ad-

ministrator shall approve or disapprove an alternative standard as expeditiously as practicable. The Administrator shall approve an alternative standard, unless the Administrator determines that the approved test plan has not been followed, or any required calculations are incorrect, or any demonstration required under paragraph (d)(3)(iv) of this section does not satisfy the applicable criteria under that paragraph. If the alternative standard is disapproved, the Administrator will issue a written notification to the owner or operator within the 60-day period.

(2) The owner or operator shall comply with the applicable visible emission limitation for coke oven doors and all other requirements in this subpart prior to approval of an alternative standard. The owner or operator may apply for an alternative standard at any time after December 4, 1992.

(3) An application for an alternative standard to the standard in § 63.304(b)(1)(i) for any shed that is not a new shed that is filed on or before June 15, 1993, is deemed approved if a notice of disapproval has not been received 60 days after submission of a complete request. An approval under paragraph (e)(3) of this section shall be valid for a period of 1 year.

(4) Notwithstanding the provisions of paragraph (e) of this section, no alternative standard shall be approved that exceeds 15 percent leaking coke oven doors (yard equivalent).

(f) After approval of an alternative standard, the owner or operator shall comply with the following requirements:

(1) The owner or operator shall not discharge or allow to be discharged to the atmosphere coke oven emissions from coke oven doors under sheds that exceed an approved alternative standard for percent leaking coke oven doors under sheds.

(i) All visible emission observations for compliance determinations shall be performed by a certified observer.

(ii) Compliance with the alternative standard for doors shall be determined by a weekly performance test conducted according to the procedures and requirements in § 63.309(d)(5) and Method 303 in appendix A to this part.

(iii) If the visible emission limitation is achieved for 12 consecutive observations, compliance shall be determined by monthly rather than weekly performance tests. If any exceedance occurs during a performance test, weekly performance tests shall be resumed.

(iv) Observations taken at times other than those specified in paragraphs (f)(1)(ii) and (f)(1)(iii) of this section shall be subject to the provisions of § 63.309(f).

(2) The certified observer shall monitor the visible coke oven emissions escaping capture by the shed on a weekly basis. The provision in paragraph (f)(6) of this section is applicable if visible coke oven emissions are observed during periods when pushing emissions have cleared the shed.

(3) The owner or operator shall not discharge or allow to be discharged to the atmosphere any visible emissions from the shed's control device exhibiting more than 0 percent opacity unless an alternative limit has been approved under paragraph (e) of this section.

(4) The opacity of emissions from the control device for the shed shall be monitored in accordance with the requirements of either paragraph (f)(4)(i) or (f)(4)(ii) of this section, at the election of the owner or operator.

(i) The owner or operator shall install, operate, and maintain a continuous opacity monitor, and record the output of the system, for the measurement of the opacity of emissions discharged from the emission control system.

(A) Each continuous opacity monitoring system shall meet the requirements of Performance Specification 1 in appendix B to part 60 of this chapter; and

(B) Each continuous opacity monitoring system shall be operated, calibrated, and maintained according to the procedures and requirements specified in part 52 of this chapter; or

(ii) A certified observer shall monitor and record at least once each day during daylight hours, opacity observations for the control device for the shed using Method 9 in appendix A to part 60 of this chapter.

(5) The owner or operator shall visually inspect the structural integrity of the shed at least once a quarter for

defects, such as deterioration of sheet metal (e.g., holes in the shed), that may allow the escape of visible emissions.

(i) The owner or operator shall record the time and date a defect is first observed, the time and date the defect is corrected or repaired, and a brief description of repairs or corrective actions taken;

(ii) The owner or operator shall temporarily repair the defect as soon as possible, but no later than 5 days after detection of the defect;

(iii) Unless a major repair is required, the owner or operator shall perform a complete repair of the defect within 15 days of detection of the defect. If a major repair is required (e.g., replacement of large sections of the shed), the owner or operator shall submit a repair schedule to the enforcement agency.

(6) If the no visible emission limit for the shed specified in paragraph (f)(2) of this section is exceeded, the Administrator may require another test for the shed according to the approved test plan as specified in paragraph (c) of this section. If the certified observer observes visible coke oven emissions from the shed, except during periods of pushing or when pushing emissions have not cleared the shed, the owner or operator shall check to ensure that the shed and control device are working properly.

(7) The owner or operator shall monitor the parameter(s) affecting shed exhaust flow rate, and record data, in accordance with the approved monitoring plan for these parameters.

(8) The owner or operator shall not operate the exhaust system of the shed at an exhaust flow rate lower than that measured during the test required under paragraph (c)(1) of this section, as indicated by the monitored parameters.

(g) Each side of a battery subject to an alternative standard for doors under this section shall be treated separately for purposes of §§ 63.306(c) (plan implementation) and 63.306(d) (plan revisions) of this subpart. In making determinations under these provisions for the side of the battery subject to an alternative standard, the requirement that exceedances be independent shall not apply. During any period when

work practices for doors for both sides of the battery are required to be implemented, § 63.306(a)(3) shall apply in the same manner as if the provisions of a plan for a single emissions point were required to be implemented. Exceedances of the alternative standard for percent leaking doors under a shed is the only provision in this section implicating implementation of work practice requirements.

(h) Multiple exceedances of the visible emission limitation for door leaks and/or the provisions of an alternative standard under this section for door leaks at a battery on a single day shall be considered a single violation.

§ 63.306 Work practice standards.

(a) *Work practice plan.* On or before November 15, 1993, each owner or operator shall prepare and submit to the Administrator a written emission control work practice plan for each coke oven battery. The plan shall be designed to achieve compliance with visible emission limitations for coke oven doors, topside port lids, offtake systems, and charging operations under this subpart or, for a coke oven battery not subject to visible emission limitations under this subpart, other federally enforceable visible emission limitations for these emission points.

(1) The work practice plan must address each of the topics specified in paragraph (b) of this section in sufficient detail and with sufficient specificity to allow the Administrator to evaluate the plan for completeness and enforceability.

(2) The Administrator may require revisions to the initial plan only where the Administrator finds either that the plan does not address each subject area listed in paragraph (b) of this section for each emission point subject to a visible emission standard under this subpart, or that the plan is unenforceable because it contains requirements that are unclear.

(3) During any period of time that an owner or operator is required to implement the provisions of a plan for a particular emission point, the failure to implement one or more obligations under the plan and/or any record-keeping requirement(s) under § 63.311(f)(4) for the emission point dur-

ing a particular day is a single violation.

(b) *Plan components.* The owner or operator shall organize the work practice plan to indicate clearly which parts of the plan pertain to each emission point subject to visible emission standards under this subpart. Each of the following provisions, at a minimum, shall be addressed in the plan:

(1) An initial and refresher training program for all coke plant operating personnel with responsibilities that impact emissions, including contractors, in job requirements related to emission control and the requirements of this subpart, including work practice requirements. Contractors with responsibilities that impact emission control may be trained by the owner or operator or by qualified contractor personnel; however, the owner or operator shall ensure that the contractor training program complies with the requirements of this section. The training program in the plan must include:

(i) A list, by job title, of all personnel that are required to be trained and the emission point(s) associated with each job title;

(ii) An outline of the subjects to be covered in the initial and refresher training for each group of personnel;

(iii) A description of the training method(s) that will be used (e.g., lecture, video tape);

(iv) A statement of the duration of initial training and the duration and frequency of refresher training;

(v) A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion of the initial and refresher training; and

(vi) A description of the procedure to be used to document performance of plan requirements pertaining to daily operation of the coke oven battery and its emission control equipment, including a copy of the form to be used, if applicable, as required under the plan provisions implementing paragraph (b)(7) of this section.

(2) Procedures for controlling emissions from coke oven doors on by-product coke oven batteries, including:

(i) A program for the inspection, adjustment, repair, and replacement of coke oven doors and jambs, and any

other equipment for controlling emissions from coke oven doors, including a defined frequency of inspections, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances;

(ii) Procedures for identifying leaks that indicate a failure of the emissions control equipment to function properly, including a clearly defined chain of command for communicating information on leaks and procedures for corrective action;

(iii) Procedures for cleaning all sealing surfaces of each door and jamb, including identification of the equipment that will be used and a specified schedule or frequency for the cleaning of sealing surfaces;

(iv) For batteries equipped with self-sealing doors, procedures for use of supplemental gasketing and luting materials, if the owner or operator elects to use such procedures as part of the program to prevent exceedances;

(v) For batteries equipped with hand-luted doors, procedures for luting and reluting, as necessary to prevent exceedances;

(vi) Procedures for maintaining an adequate inventory of the number of spare coke oven doors and jambs located onsite; and

(vii) Procedures for monitoring and controlling collecting main back pressure, including corrective action if pressure control problems occur.

(3) Procedures for controlling emissions from charging operations on by-product coke oven batteries, including:

(i) Procedures for equipment inspection, including the frequency of inspections, and replacement or repair of equipment for controlling emissions from charging, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances;

(ii) Procedures for ensuring that the larry car hoppers are filled properly with coal;

(iii) Procedures for the alignment of the larry car over the oven to be charged;

(iv) Procedures for filling the oven (e.g., procedures for staged or sequential charging);

(v) Procedures for ensuring that the coal is leveled properly in the oven; and

(vi) Procedures and schedules for inspection and cleaning of offtake systems (including standpipes, standpipe caps, goosenecks, dampers, and mains), oven roofs, charging holes, topside port lids, the steam supply system, and liquor sprays.

(4) Procedures for controlling emissions from topside port lids on by-product coke oven batteries, including:

(i) Procedures for equipment inspection and replacement or repair of topside port lids and port lid mating and sealing surfaces, including the frequency of inspections, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances; and

(ii) Procedures for sealing topside port lids after charging, for identifying topside port lids that leak, and procedures for resealing.

(5) Procedures for controlling emissions from offtake system(s) on by-product coke oven batteries, including:

(i) Procedures for equipment inspection and replacement or repair of offtake system components, including the frequency of inspections, the method to be used to evaluate conformance with operating specifications for each type of equipment, and the method to be used to audit the effectiveness of the inspection and repair program for preventing exceedances;

(ii) Procedures for identifying offtake system components that leak and procedures for sealing leaks that are detected; and

(iii) Procedures for dampering off ovens prior to a push.

(6) Procedures for controlling emissions from nonrecovery coke oven batteries including:

(i) Procedures for charging coal into the oven, including any special procedures for minimizing air infiltration

during charging, maximizing the draft on the oven, and for replacing the door promptly after charging;

(ii) If applicable, procedures for the capture and control of charging emissions;

(iii) Procedures for cleaning coke from the door sill area for both sides of the battery after completing the pushing operation and before replacing the coke oven door;

(iv) Procedures for cleaning coal from the door sill area after charging and before replacing the push side door;

(v) Procedures for filling gaps around the door perimeter with sealant material, if applicable; and

(vi) Procedures for detecting and controlling emissions from smoldering coal.

(7) Procedures for maintaining, for each emission point subject to visible emission limitations under this subpart, a daily record of the performance of plan requirements pertaining to the daily operation of the coke oven battery and its emission control equipment, including:

(i) Procedures for recording the performance of such plan requirements; and

(ii) Procedures for certifying the accuracy of such records by the owner or operator.

(8) Any additional work practices or requirements specified by the Administrator according to paragraph (d) of this section.

(c) *Implementation of work practice plans.* On and after November 15, 1993, the owner or operator of a coke oven battery shall implement the provisions of the coke oven emission control work practice plan according to the following requirements:

(1) The owner or operator of a coke oven battery subject to visible emission limitations under this subpart on and after November 15, 1993, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second independent exceedance of the visible emission limitation for the emission point in any consecutive 6-month period, by no later than 3 days after receipt of written notification of the second such exceedance from the certified observer. For the purpose of

this paragraph (c)(1)(i), the second exceedance is "independent" if either of the following criteria is met:

(A) The second exceedance occurs 30 days or more after the first exceedance;

(B) In the case of coke oven doors, topside port lids, and offtake systems, the 29-run average, calculated by excluding the highest value in the 30-day period, exceeds the value of the applicable emission limitation; or

(C) In the case of charging emissions, the 29-day logarithmic average, calculated in accordance with Method 303 in appendix A to this part by excluding the valid daily set of observations in the 30-day period that had the highest arithmetic average, exceeds the value of the applicable emission limitation.

(ii) Continue to implement such plan provisions until the visible emission limitation for the emission point is achieved for 90 consecutive days if work practice requirements are implemented pursuant to paragraph (c)(1)(i) of this section. After the visible emission limitation for a particular emission point is achieved for 90 consecutive days, any exceedances prior to the beginning of the 90 days are not included in making a determination under paragraph (c)(1)(i) of this section.

(2) The owner or operator of a coke oven battery not subject to visible emission limitations under this subpart until December 31, 1995, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second exceedance in any consecutive 6-month period of a federally enforceable emission limitation for that emission point for coke oven doors, topside port lids, offtake systems, or charging operations by no later than 3 days after receipt of written notification from the applicable enforcement agency; and

(ii) Continue to implement such plan provisions for 90 consecutive days after the most recent written notification from the enforcement agency of an exceedance of the visible emission limitation.

(d) *Revisions to plan.* Revisions to the work practice emission control plan will be governed by the provisions in this paragraph (d) and in paragraph (a)(2) of this section.

(1) The Administrator may request the owner or operator to review and revise as needed the work practice emission control plan for a particular emission point if there are 2 exceedances of the applicable visible emission limitation in the 6-month period that starts 30 days after the owner or operator is required to implement work practices under paragraph (c) of this section. In the case of a coke oven battery subject to visual emission limitations under this subpart, the second exceedance must be independent under the criteria in paragraph (c)(1)(i) of this section.

(2) The Administrator may not request the owner or operator to review and revise the plan more than twice in any 12 consecutive month period for any particular emission point unless the Administrator disapproves the plan according to the provisions in paragraph (d)(6) of this section.

(3) If the certified observer calculates that a second exceedance (or, if applicable, a second independent exceedance) has occurred, the certified observer shall notify the owner or operator. No later than 10 days after receipt of such a notification, the owner or operator shall notify the Administrator of any finding of whether work practices are related to the cause or the solution of the problem. This notification is subject to review by the Administrator according to the provisions in paragraph (d)(6) of this section.

(4) The owner or operator shall submit a revised work practice plan within 60 days of notification from the Administrator under paragraph (d)(1) of this section, unless the Administrator grants an extension of time to submit the revised plan.

(5) If the Administrator requires a plan revision, the Administrator may require the plan to address a subject area or areas in addition to those in paragraph (b) of this section, if the Administrator determines that without plan coverage of such an additional subject area, there is a reasonable probability of further exceedances of the visible emission limitation for the emission point for which a plan revision is required.

(6) The Administrator may disapprove a plan revision required under paragraph (d) of this section if the Ad-

ministrator determines that the revised plan is inadequate to prevent exceedances of the visible emission limitation under this subpart for the emission point for which a plan revision is required or, in the case of a battery not subject to visual emission limitations under this subpart, other federally enforceable emission limitations for such emission point. The Administrator may also disapprove the finding that may be submitted pursuant to paragraph (d)(3) of this section if the Administrator determines that a revised plan is needed to prevent exceedances of the applicable visible emission limitations.

§63.307 Standards for bypass/bleeder stacks.

(a)(1) Except as otherwise provided in this section, on or before March 31, 1994, the owner or operator of an existing by-product recovery battery for which a notification was not submitted under paragraph (e)(1) of this section shall install a bypass/bleeder stack flare system that is capable of controlling 120 percent of the normal gas flow generated by the battery, which shall thereafter be operated and maintained.

(2) Coke oven emissions shall not be vented to the atmosphere through bypass/bleeder stacks, except through the flare system or the alternative control device as described in paragraph (d) of this section.

(3) The owner or operator of a brownfield coke oven battery or a padup rebuild shall install such a flare system before startup, and shall properly operate and maintain the flare system.

(b) Each flare installed pursuant to this section shall meet the following requirements:

(1) Each flare shall be designed for a net heating value of 8.9 MJ/scm (240 Btu/scf) if a flare is steam-assisted or air-assisted, or a net value of 7.45 MJ/scm (200 Btu/scf) if the flare is non-assisted.

(2) Each flare shall have either a continuously operable pilot flame or an electronic igniter that meets the requirements of paragraphs (b)(3) and (b)(4) of this section.

(3) Each electronic igniter shall meet the following requirements:

(i) Each flare shall be equipped with at least two igniter plugs with redundant igniter transformers;

(ii) The ignition units shall be designed failsafe with respect to flame detection thermocouples (i.e., any flame detection thermocouples are used only to indicate the presence of a flame, are not interlocked with the ignition unit, and cannot deactivate the ignition system); and

(iii) Integral battery backup shall be provided to maintain active ignition operation for a minimum of 15 minutes during a power failure.

(iv) Each electronic igniter shall be operated to initiate ignition when the bleeder valve is not fully closed as indicated by an "OPEN" limit switch.

(4) Each flare installed to meet the requirements of this paragraph (b) that does not have an electronic igniter shall be operated with a pilot flame present at all times as determined by § 63.309(h)(2).

(c) Each flare installed to meet the requirements of this section shall be operated with no visible emissions, as determined by the methods specified in § 63.309(h)(1), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(d) As an alternative to the installation, operation, and maintenance of a flare system as required in paragraph (a) of this section, the owner or operator may petition the Administrator for approval of an alternative control device or system that achieves at least 98 percent destruction or control of coke oven emissions vented to the alternative control device or system.

(e) The owner or operator of a by-product coke oven battery is exempt from the requirements of this section if the owner or operator:

(1) Submits to the Administrator, no later than November 10, 1993, a formal commitment to close the battery permanently; and

(2) Closes the battery permanently no later than December 31, 1995. In no case may the owner or operator continue to operate a battery for which a closure commitment is submitted, past December 31, 1995.

(f) Any emissions resulting from the installation of flares (or other pollution control devices or systems ap-

proved pursuant to paragraph (d) of this section) shall not be used in making new source review determinations under part C and part D of title I of the Act.

§ 63.308 Standards for collecting mains.

(a) On and after November 15, 1993, the owner or operator of a by-product coke oven battery shall inspect the collecting main for leaks at least once daily according to the procedures in Method 303 in appendix A to this part.

(b) The owner or operator shall record the time and date a leak is first observed, the time and date the leak is temporarily sealed, and the time and date of repair.

(c) The owner or operator shall temporarily seal any leak in the collecting main as soon as possible after detection, but no later than 4 hours after detection of the leak.

(d) The owner or operator shall initiate a collecting main repair as expeditiously as possible, but no later than 5 calendar days after initial detection of the leak. The repair shall be completed within 15 calendar days after initial detection of the leak unless an alternative schedule is approved by the Administrator.

§ 63.309 Performance tests and procedures.

(a) Except as otherwise provided, a daily performance test shall be conducted each day, 7 days per week for each new and existing coke oven battery, the results of which shall be used in accordance with procedures specified in this subpart to determine compliance with each of the applicable visible emission limitations for coke oven doors, topside port lids, offtake systems, and charging operations in this subpart. If a facility pushes and charges only at night, then that facility must, at its option, change their schedule and charge during daylight hours or provide adequate lighting so that visible emission inspections can be made at night. "Adequate lighting" will be determined by the enforcement agency.

(1) Each performance test is to be conducted according to the procedures and requirements in this section and in

Method 303 or 303A in appendix A to this part or Methods 9 and 22 in appendix A to part 60 of this chapter (where applicable).

(2) Each performance test is to be conducted by a certified observer.

(3) The certified observer shall complete any reasonable safety training program offered by the owner or operator prior to conducting any performance test at a coke oven battery.

(4) Except as otherwise provided in paragraph (a)(5) of this section, the owner or operator shall pay an inspection fee to the enforcement agency each calendar quarter to defray the costs of the daily performance tests required under paragraph (a) of this section.

(i) The inspection fee shall be determined according to the following formula:

$$F = H \times S \quad (\text{Eq. 3})$$

where

F=Fees to be paid by owner or operator.

H=Total person hours for inspections: 4 hours for 1 coke oven battery, 6.25 hours for 2 coke oven batteries, 8.25 hours for 3 coke oven batteries. For more than 3 coke oven batteries, use these hours to calculate the appropriate estimate of person hours.

S=Current average hourly rate for private visible emission inspectors in the relevant market.

(ii) The enforcement agency may revise the value for H in equation 3 within 3 years after October 27, 1993 to reflect the amount of time actually required to conduct the inspections required under paragraph (a) of this section.

(iii) The owner or operator shall not be required to pay an inspection fee (or any part thereof) under paragraph (a)(4) of this section, for any monitoring or inspection services required by paragraph (a) of this section that the owner or operator can demonstrate are covered by other fees collected by the enforcement agency.

(iv) Upon request, the enforcement agency shall provide the owner or operator information concerning the inspection services covered by any other fees collected by the enforcement agency, and any information relied upon

under paragraph (a)(4)(ii) of this section.

(5)(i) The EPA shall be the enforcement agency during any period of time that a delegation of enforcement authority is not in effect or a withdrawal of enforcement authority under § 63.313 is in effect, and the Administrator is responsible for performing the inspections required by this section, pursuant to § 63.313(b).

(ii) Within thirty (30) days of receiving notification from the Administrator that the EPA is the enforcement agency for a coke oven battery, the owner or operator shall enter into a contract providing for the inspections and performance tests required under this section to be performed by a Method 303 certified observer. The inspections and performance tests will be conducted at the expense of the owner or operator, during the period that the EPA is the implementing agency.

(b) The enforcement agency shall commence daily performance tests on the applicable date specified in § 63.300 (a) or (c).

(c) The certified observer shall conduct each performance test according to the requirements in this paragraph:

(1) The certified observer shall conduct one run each day to observe and record visible emissions from each coke oven door (except for doors covered by an alternative standard under § 63.305), topside port lid, and offtake system on each coke oven battery. The certified observer also shall conduct five runs to observe and record the seconds of visible emissions per charge for five consecutive charges from each coke oven battery. The observer may perform additional runs as needed to obtain and record a visible emissions value (or set of values) for an emission point that is valid under Method 303 or Method 303A in appendix A to this part. Observations from fewer than five consecutive charges shall constitute a valid set of charging observations only in accordance with the procedures and conditions specified in sections 3.8 and 3.9 of Method 303 in appendix A to this part.

(2) If a valid visible emissions value (or set of values) is not obtained for a

performance test, there is no compliance determination for that day. Compliance determinations will resume on the next day that a valid visible emissions value (or set of values) is obtained.

(3) After each performance test for a by-product coke oven battery, the certified observer shall check and record the collecting main pressure according to the procedures in section 6.3 of Method 303 in appendix A to this part.

(i) The owner or operator shall demonstrate pursuant to Method 303 in appendix A to this part the accuracy of the pressure measurement device upon request of the certified observer;

(ii) The owner or operator shall not adjust the pressure to a level below the range of normal operation during or prior to the inspection;

(4) The certified observer shall monitor visible emissions from coke oven doors subject to an alternative standard under § 63.305 on the schedule specified in § 63.305(f).

(5) If applicable, the certified observer shall monitor the opacity of any emissions escaping the control device for a shed covering doors subject to an alternative standard under § 63.305 on the schedule specified in § 63.305(f).

(6) In no case shall the owner or operator knowingly block a coke oven door, or any portion of a door for the purpose of concealing emissions or preventing observations by the certified observer.

(d) Using the observations obtained from each performance test, the enforcement agency shall compute and record, in accordance with the procedures and requirements of Method 303 or 303A in appendix A to this part, for each day of operations on which a valid emissions value (or set of values) is obtained:

(1) The 30-run rolling average of the percent leaking coke oven doors, top-side port lids, and offtake systems on each coke oven battery, using the equations in sections 4.5.3.2, 5.6.5.2, and 5.6.6.2 of Method 303 (or section 3.4.3.2 of Method 303A) in appendix A to this part;

(2) For by-product coke oven battery charging operations, the logarithmic 30-day rolling average of the seconds of visible emissions per charge for each battery, using the equation in section

3.9 of Method 303 in appendix A to this part;

(3) For a battery subject to an alternative emission limitation for coke oven doors on by-product coke oven batteries pursuant to § 63.305, the 30-run rolling average of the percent leaking coke oven doors for any side of the battery not subject to such alternative emission limitation;

(4) For a by-product coke oven battery subject to the small battery emission limitation for coke oven doors pursuant to § 63.304(b)(7), the 30-run rolling average of the number of leaking coke oven doors;

(5) For an approved alternative emission limitation for coke oven doors according to § 63.305, the weekly or monthly observation of the percent leaking coke oven doors using Method 303 in appendix A to this part, the percent opacity of visible emissions from the control device for the shed using Method 9 in appendix A to part 60 of this chapter, and visible emissions from the shed using Method 22 in appendix A to part 60 of this chapter;

(e) The certified observer shall make available to the implementing agency as well as to the owner or operator, a copy of the daily inspection results by the end of the day and shall make available the calculated rolling average for each emission point to the owner or operator as soon as practicable following each performance test. The information provided by the certified observer is not a compliance determination. For the purpose of notifying an owner or operator of the results obtained by a certified observer, the person does not have to be certified.

(f) Compliance shall not be determined more often than the schedule provided for performance tests under this section. If additional valid emissions observations are obtained (or in the case of charging, valid sets of emission observations), the arithmetic average of all valid values (or valid sets of values) obtained during the day shall be used in any computations performed to determine compliance under paragraph (d) of this section or determinations under § 63.306.

(g) Compliance with the alternative standards for nonrecovery coke oven

batteries in § 63.303; shed inspection, maintenance requirements, and monitoring requirements for parameters affecting the shed exhaust flow rate for batteries subject to alternative standards for coke oven doors under § 63.305; work practice emission control plan requirements in § 63.306; standards for bypass/bleeder stacks in § 63.307; and standards for collecting mains in § 63.308 is to be determined by the enforcement agency based on review of records and inspections.

(h) For a flare installed to meet the requirements of § 63.307(b):

(1) Compliance with the provisions in § 63.307(c) (visible emissions from flares) shall be determined using Method 22 in appendix A to part 60 of this chapter, with an observation period of 2 hours; and

(2) Compliance with the provisions in § 63.307(b)(4) (flare pilot light) shall be determined using a thermocouple or any other equivalent device.

(i) No observations obtained during any program for training or for certifying observers under this subpart shall be used to determine compliance with the requirements of this subpart or any other federally enforceable standard.

§ 63.310 Requirements for startups, shutdowns, and malfunctions.

(a) At all times including periods of startup, shutdown, and malfunction, the owner or operator shall operate and maintain the coke oven battery and its pollution control equipment required under this subpart, in a manner consistent with good air pollution control practices for minimizing emissions to the levels required by any applicable performance standards under this subpart. Failure to adhere to the requirement of this paragraph shall not constitute a separate violation if a violation of an applicable performance or work practice standard has also occurred.

(b) Each owner or operator of a coke oven battery shall develop and implement according to paragraph (c) of this section, a written startup, shutdown, and malfunction plan that describes procedures for operating the battery, including associated air pollution control equipment, during a period of a startup, shutdown, or malfunction in a

manner consistent with good air pollution control practices for minimizing emissions, and procedures for correcting malfunctioning process and air pollution control equipment as quickly as practicable.

(c) During a period of startup, shutdown, or malfunction:

(1) The owner or operator of a coke oven battery shall operate the battery (including associated air pollution control equipment) in accordance with the procedure specified in the startup, shutdown, and malfunction plan; and

(2) Malfunctions shall be corrected as soon as practicable after their occurrence, in accordance with the plan.

(d) In order for the provisions of paragraph (i) of this section to apply with respect to the observation (or set of observations) for a particular day, notification of a startup, shutdown, or a malfunction shall be made by the owner or operator:

(1) If practicable, to the certified observer if the observer is at the facility during the occurrence; or

(2) To the enforcement agency, in writing, within 24 hours of the occurrence first being documented by a company employee, and if the notification under paragraph (d)(1) of this section was not made, an explanation of why no such notification was made.

(e) Within 14 days of the notification made under paragraph (d) of this section, or after a startup or shutdown, the owner or operator shall submit a written report to the applicable permitting authority that:

(1) Describes the time and circumstances of the startup, shutdown, or malfunction; and

(2) Describes actions taken that might be considered inconsistent with the startup, shutdown, or malfunction plan.

(f) The owner or operator shall maintain a record of internal reports which form the basis of each malfunction notification under paragraph (d) of this section.

(g) To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the standard operating procedures manual for the battery, provided the manual meets all the requirements for this section and is

made available for inspection at reasonable times when requested by the Administrator.

(h) The Administrator may require reasonable revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

(1) Does not address a startup, shutdown, or malfunction event that has occurred;

(2) Fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions; or

(3) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

(i) If the owner or operator demonstrates to the satisfaction of the Administrator that a startup, shutdown, or malfunction has occurred, then an observation occurring during such startup, shutdown, or malfunction shall not:

(1) Constitute a violation of relevant requirements of this subpart;

(2) Be used in any compliance determination under § 63.309; or

(3) Be considered for purposes of § 63.306, until the Administrator has resolved the claim that a startup, shutdown, or malfunction has occurred. If the Administrator determines that a startup, shutdown, or malfunction has not occurred, such observations may be used for purposes of § 63.306, regardless of whether the owner or operator further contests such determination. The owner's or operator's receipt of written notification from the Administrator that a startup, shutdown, or malfunction has not occurred will serve, where applicable under § 63.306, as written notification from the certified observer that an exceedance has occurred.

§ 63.311 Reporting and recordkeeping requirements.

(a) After the effective date of an approved permit in a State under part 70 of this chapter, the owner or operator shall submit all notifications and reports required by this subpart to the State permitting authority. Use of information provided by the certified ob-

server shall be a sufficient basis for notifications required under § 70.5(c)(9) of this chapter and the reasonable inquiry requirement of § 70.5(d) of this chapter.

(b) *Initial compliance certification.* The owner or operator of an existing or new coke oven battery shall provide a written statement(s) to certify compliance to the Administrator within 45 days of the applicable compliance date for the emission limitations or requirements in this subpart. The owner or operator shall include the following information in the initial compliance certification:

(1) Statement, signed by the owner or operator, certifying that a bypass/bleeder stack flare system or an approved alternative control device or system has been installed as required in § 63.307; and

(2) Statement, signed by the owner or operator, certifying that a written startup, shutdown, and malfunction plan has been prepared as required in § 63.310.

(c) *Notifications.* The owner or operator shall provide written notification(s) to the Administrator of:

(1) Intention to construct a new coke oven battery (including reconstruction of an existing coke oven battery and construction of a greenfield coke oven battery), a brownfield coke oven battery, or a padup rebuild coke oven battery, including the anticipated date of startup; and

(2) Election to meet emission limitation(s) in this subpart as follows:

(i) Notification of election to meet the emission limitations in § 63.304(b)(1) or § 63.304(c) either in lieu of or in addition to the applicable emission limitations in § 63.302(a) or § 63.303(a) must be received by the Administrator on or before November 15, 1993; or

(ii) Notification of election to meet the emission limitations in § 63.302(a)(1) or § 63.303(a), as applicable, must be received by the Administrator on or before December 31, 1995; and

(iii) Notification of election to meet the emission limitations in § 63.304(b)(2) through (4) and § 63.304(c) or election to meet residual risk standards to be developed according to section 112(f) of the Act in lieu of the emission standards in § 63.304 must be received on or before January 1, 1998.

(d) *Semiannual compliance certification.* The owner or operator of a coke oven battery shall include the following information in the semiannual compliance certification:

(1) Certification, signed by the owner or operator, that no coke oven gas was vented, except through the bypass/bleeder stack flare system of a by-product coke oven battery during the reporting period or that a venting report has been submitted according to the requirements in paragraph (e) of this section;

(2) Certification, signed by the owner or operator, that a startup, shutdown, or malfunction event did not occur for a coke oven battery during the reporting period or that a startup, shutdown, and malfunction event did occur and a report was submitted according to the requirements in § 63.310(e); and

(3) Certification, signed by the owner or operator, that work practices were implemented if applicable under § 63.306.

(e) *Report for the venting of coke oven gas other than through a flare system.* The owner or operator shall report any venting of coke oven gas through a bypass/bleeder stack that was not vented through the bypass/bleeder stack flare system to the Administrator as soon as practicable but no later than 24 hours after the beginning of the event. A written report shall be submitted within 30 days of the event and shall include a description of the event and, if applicable, a copy of the notification for a hazardous substance release required pursuant to § 302.6 of this chapter.

(f) *Recordkeeping.* The owner or operator shall maintain files of all required information in a permanent form suitable for inspection at an onsite location for at least 1 year and must thereafter be accessible within 3 working days to the Administrator for the time period specified in § 70.6(a)(3)(ii)(B) of this chapter. Copies of the work practice plan developed under § 63.306 and the startup, shutdown, and malfunction plan developed under § 63.310 shall be kept onsite at all times. The owner or operator shall maintain the following information:

(1) For nonrecovery coke oven batteries,

(i) Records of daily pressure monitoring, if applicable according to § 63.303(a)(1)(ii) or § 63.303(b)(1)(ii);

(ii) Records demonstrating the performance of work practice requirements according to § 63.306(b)(7); and

(iii) Design characteristics of each emission control system for the capture and collection of charging emissions, as required by § 63.303(b)(2).

(2) For an approved alternative emission limitation according to § 63.305;

(i) Monitoring records for parameter(s) that indicate the exhaust flow rate is maintained;

(ii) If applicable under § 63.305(f)(4)(i);

(A) Records of opacity readings from the continuous opacity monitor for the control device for the shed; and

(B) Records that demonstrate the continuous opacity monitoring system meets the requirements of Performance Specification 1 in appendix B to part 60 of this chapter and the operation and maintenance requirements in part 52 of this chapter; and

(iii) Records of quarterly visual inspections as specified in § 63.305(f)(5), including the time and date a defect is detected and repaired.

(3) A copy of the work practice plan required by § 63.306 and any revision to the plan;

(4) If the owner or operator is required under § 63.306(c) to implement the provisions of a work practice plan for a particular emission point, the following records regarding the implementation of plan requirements for that emission point during the implementation period;

(i) Copies of all written and audiovisual materials used in the training, the dates of each class, the names of the participants in each class, and documentation that all appropriate personnel have successfully completed the training required under § 63.306(b)(1);

(ii) The records required to be maintained by the plan provisions implementing § 63.306(b)(7);

(iii) Records resulting from audits of the effectiveness of the work practice program for the particular emission point, as required under § 63.306(b)(2)(i), § 63.306(b)(3)(i), § 63.306(b)(4)(i), or § 63.306(b)(5)(i); and

(iv) If the plan provisions for coke oven doors must be implemented,

records of the inventory of doors and jambs as required under § 63.306(b)(2)(vi); and

(5) The design drawings and engineering specifications for the bypass/bleeder stack flare system or approved alternative control device or system as required under § 63.307.

(6) Records specified in § 63.310(f) regarding the basis of each malfunction notification.

(g) Records required to be maintained and reports required to be filed with the Administrator under this subpart shall be made available in accordance with the requirements of this paragraph by the owner or operator to the authorized collective bargaining representative of the employees at a coke oven battery, for inspection and copying.

(1) Requests under paragraph (g) of this section shall be submitted in writing, and shall identify the records or reports that are subject to the request with reasonable specificity;

(2) The owner or operator shall produce the reports for inspection and copying within a reasonable period of time, not to exceed 30 days. A reasonable fee may be charged for copying (except for the first copy of any document), which shall not exceed the copying fee charged by the Administrator under part 2 of this chapter;

(3) Nothing in paragraph (g) of this section shall require the production for inspection or copying of any portion of a document that contains trade secrets or confidential business information that the Administrator would be prohibited from disclosing to the public under part 2 of this chapter; and

(4) The inspection or copying of a document under paragraph (g) of this section shall not in any way affect any property right of the owner or operator in such document under laws for the protection of intellectual property, including the copyright laws.

§ 63.312 Existing regulations and requirements.

(a) The owner or operator shall comply with all applicable State implementation plan emission limits and (subject to any expiration date) all federally enforceable emission limitations which are contained in an order, de-

cree, permit, or settlement agreement for the control of emissions from offtake systems, topside port lids, coke oven doors, and charging operations in effect on September 15, 1992, or which have been modified according to the provisions of paragraph (c) of this section.

(b) Nothing in this subpart shall affect the enforcement of such State implementation plan emission limitations (or, subject to any expiration date, such federally enforceable emission limitations contained in an order, decree, permit, or settlement agreement) in effect on September 15, 1992, or which have been modified according to the provisions in paragraph (c) of this section.

(c) No such State implementation plan emission limitation (or, subject to any expiration date, such federally enforceable emission limitation contained in an order, decree, permit, or settlement agreement) in effect on September 15, 1992, may be modified under the Act unless:

(1) Such modification is consistent with all requirements of section 110 of the Act; and either

(i) Such modification ensures that the applicable emission limitations and format (e.g., single pass v. multiday average) in effect on September 15, 1992, will continue in effect; or

(ii) Such modification includes a change in the method of monitoring (except frequency unless frequency was indicated in the State implementation plan, or subject to any expiration date, other federally enforceable requirements contained in an order, decree, permit, or settlement agreement) that is more stringent than the method of monitoring in effect on September 15, 1992, and that ensures coke oven emission reductions greater than the emission reductions required on September 15, 1992. The burden of proof in demonstrating the stringency of the methods of monitoring is borne by the party requesting the modification and must be made to the satisfaction of the Administrator; or

(iii) Such modification makes the emission limitations more stringent while holding the format unchanged, makes the format more stringent while

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holding the emission limitations unchanged, or makes both more stringent.

(2) Any industry application to make a State implementation plan revision or other adjustment to account for differences between Method 303 in appendix A to this part and the State's method based on paragraph (c)(1)(ii) of this section shall be submitted within 12 months after October 27, 1993.

(d) Except as specified in §63.307(f), nothing in this subpart shall limit or affect any authority or obligation of Federal, State, or local agencies to establish emission limitations or other requirements more stringent than those specified in this subpart.

(e) Except as provided in §63.302(c), section 112(g) of the Act shall not apply to sources subject to this subpart.

§63.313 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (c) of this section shall be retained by the Administrator and not transferred to a State.

(b) Whenever the Administrator learns that a delegated agency has not fully carried out the inspections and performance tests required under §63.309 for each applicable emission point of each battery each day, the Administrator shall immediately notify the agency. Unless the delegated agency demonstrates to the Administrator's satisfaction within 15 days of notification that the agency is consistently carrying out the inspections and performance tests required under §63.309 in the manner specified in the preceding sentence, the Administrator shall notify the coke oven battery owner or operator that inspections and performance tests shall be carried out according to §63.309(a)(5). When the Administrator determines that the delegated agency is prepared to consistently perform all required inspections and performance tests each day, the Administrator shall give the coke oven battery owner or operator at least 15 days notice that implementation will revert back to the previously delegated agency.

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(c) Authorities which will not be delegated to States:

- (1) §63.302(d);
- (2) §63.304(b)(6);
- (3) §§63.305 (b), (d) and (e);
- (4) §63.307(d); and
- (5) Section 2 of Method 303 in appendix A to this part.

(d) The authority to enforce this subpart is delegated to the States of: [Reserved]

APPENDIX A TO SUBPART L—OPERATING COKE OVEN BATTERIES AS OF APRIL 1, 1992

No.	Plant	Battery
1	ABC Coke, Tarrant, AL	A 5 6
2	Acme Steel, Chicago, IL	1 2
3	Armco, Inc., Middletown, OH	1 2 3
4	Armco, Inc., Ashland, KY	3 4
5	Bethlehem Steel, Bethlehem, PA	A 2 3
6	Bethlehem Steel, Burns Harbor, IN	1 2
7	Bethlehem Steel, Lackawanna, NY	7 8
8	Citizens Gas, Indianapolis, IN	E H 1
9	Empire Coke, Holt, AL	1 2
10	Erie Coke, Erie, PA	A B
11	Geneva Steel, Provo, UT	1 2 3 4
12	Gulf States Steel, Gadsden, AL	2 3
13	Inland Steel, East Chicago, IN	6 7 9 10 11
14	Jewell Coal and Coke, Vansant, VA	2 3A 3B 3C
15	Koppers, Woodward, AL	1 2A 2B 4A 4B 5 6
16	LTV Steel, Cleveland, OH	7
17	LTV Steel, Pittsburgh, PA	P1 P2 P3N P3S P4
18	LTV Steel, Chicago, IL	2
19	LTV Steel, Warren, OH	4
20	National Steel, Ecorse, MI	5
21	National Steel, Granite City, IL	A

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APPENDIX A TO SUBPART L—OPERATING COKE OVEN BATTERIES AS OF APRIL 1, 1992—Continued

No.	Plant	Battery
22 ...	New Boston Coke, Portsmouth, OH	B
23 ...	Sharon Steel, Monessen, PA	1
		1B
24 ...	Shenango, Pittsburgh, PA	2
		1
		4
25 ...	Sloss Industries, Birmingham, AL	3
		4
		5
26 ...	Toledo Coke, Toledo, OH	C
27 ...	Tonawanda Coke, Buffalo, NY	1
28 ...	USX, Clairton, PA	1
		2
		3
		7
		8
		9
		13
		14
		15
		19
		20
		B
29 ...	USX, Gary, IN	2
		3
		5
		7
30 ...	Wheeling-Pittsburgh, E. Steubenville, WV.	1
		2
		3
		8

[58 FR 57911, Oct. 27, 1993; 59 FR 1992, Jan. 13, 1994]

Subpart M—National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities

SOURCE: 58 FR 49376, Sept. 22, 1993, unless otherwise noted.

§ 63.320 Applicability.

(a) The provisions of this subpart apply to the owner or operator of each dry cleaning facility that uses perchloroethylene.

(b) Each dry cleaning system that commences construction or reconstruction on or after December 9, 1991, shall be in compliance with the provisions of this subpart beginning on September 22, 1993 or immediately upon startup, whichever is later, except for dry cleaning systems complying with section 112(i)(2) of the Clean Air Act.

(c) Each dry cleaning system that commenced construction or reconstruction before December 9, 1991, and each new transfer machine system and

its ancillary equipment that commenced construction or reconstruction on or after December 9, 1991 and before September 22, 1993, shall comply with §§ 63.322 (c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324 (a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) beginning on December 20, 1993, and shall comply with other provisions of this subpart by September 23, 1996.

(d) Each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines, and each existing transfer machine system and its ancillary equipment and each new transfer machine system and its ancillary equipment installed between December 9, 1991 and September 22, 1993, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine system(s) and dry-to-dry machine(s) is exempt from § 63.322, § 63.323, and § 63.324, except paragraphs 63.322 (c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324 (a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the total perchloroethylene consumption of the dry cleaning facility is less than 530 liters (140 gallons) per year. Consumption is determined according to § 63.323(d).

(e) Each existing transfer machine system and its ancillary equipment, and each new transfer machine system and its ancillary equipment installed between December 9, 1991 and September 22, 1993, located in a dry cleaning facility that includes only transfer machine system(s) is exempt from § 63.322, § 63.323, and § 63.324, except paragraphs 63.322 (c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324 (a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the perchloroethylene consumption of the dry cleaning facility is less than 760 liters (200 gallons) per year. Consumption is determined according to § 63.323(d).

(f) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to § 63.323(d) is initially less than the amounts specified in paragraph (d) or (e) of this section, but later exceeds those amounts, the existing dry cleaning system(s) and new transfer machine system(s) and its

(their) ancillary equipment installed between December 9, 1991 and September 22, 1993 in the dry cleaning facility must comply with § 63.322, § 63.323, and § 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amounts specified, or by September 23, 1996, whichever is later.

(g) A dry cleaning facility is a major source if the facility emits or has the potential to emit more than 9.1 megagrams per year (10 tons per year) of perchloroethylene to the atmosphere. In lieu of measuring a facility's potential to emit perchloroethylene emissions or determining a facility's potential to emit perchloroethylene emissions, a dry cleaning facility is a major source if:

(1) It includes only dry-to-dry machine(s) and has a total yearly perchloroethylene consumption greater than 8,000 liters (2,100 gallons) as determined according to § 63.323(d); or

(2) It includes only transfer machine system(s) or both dry-to-dry machine(s) and transfer machine system(s) and has a total yearly perchloroethylene consumption greater than 6,800 liters (1,800 gallons) as determined according to § 63.323(d).

(h) A dry cleaning facility is an area source if it does not meet the conditions of paragraph (g) of this section.

(i) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to § 63.323(d) is initially less than the amounts specified in paragraph (g) of this section, but then exceeds those amounts, the dry cleaning facility becomes a major source and all dry cleaning systems located at that dry cleaning facility must comply with the appropriate requirements for major sources under §§ 63.322, 63.323, and 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amount specified, or by September 23, 1996, whichever is later.

(j) All coin-operated dry cleaning machines are exempt from the requirements of this subpart.

(k) The owner or operator of any source subject to the provisions of this subpart M is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR

70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must meet compliance schedule as stated in this § 63.320.

[58 FR 49376, Sept. 22, 1993, as amended at 58 FR 66289, Dec. 20, 1993; 61 FR 27788, June 3, 1996; 61 FR 49265, Sept. 19, 1996]

§ 63.321 Definitions.

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).

Ancillary equipment means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

Area source means any perchloroethylene dry cleaning facility that meets the conditions of § 63.320(h).

Articles mean clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned.

Biweekly means any 14-day period of time.

Carbon adsorber means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon.

Coin-operated dry cleaning machine means a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine).

Colorimetric detector tube means a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.

Construction, for purposes of this subpart, means the fabrication (onsite), erection, or installation of a dry cleaning system subject to this subpart.

Desorption means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

Diverter valve means a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open.

Dry cleaning means the process of cleaning articles using perchloroethylene.

Dry cleaning cycle means the washing and drying of articles in a dry-to-dry machine or transfer machine system.

Dry cleaning facility means an establishment with one or more dry cleaning systems.

Dry cleaning machine means a dry-to-dry machine or each machine of a transfer machine system.

Dry cleaning machine drum means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.

Dry cleaning system means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.

Dryer means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).

Dry-to-dry machine means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

Exhaust damper means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine.

Existing means commenced construction or reconstruction before December 9, 1991.

Filter means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter (button trap), cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.

Heating coil means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream reenters the dry cleaning machine drum.

Major source means any dry cleaning facility that meets the conditions of § 63.320(g).

Muck cooker means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

New means commenced construction or reconstruction on or after December 9, 1991.

Perceptible leaks mean any perchloroethylene vapor or liquid leaks that are obvious from:

- (1) The odor of perchloroethylene;
- (2) Visual observation, such as pools or droplets of liquid; or
- (3) The detection of gas flow by passing the fingers over the surface of equipment.

Perchloroethylene consumption means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

Reclaimer means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).

Reconstruction, for purposes of this subpart, means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source.

Refrigerated condenser means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.

Refrigerated condenser coil means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

Responsible official means one of the following:

- (1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other

person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more dry cleaning facilities;

(2) For a partnership: A general partner;

(3) For a sole proprietorship: The owner; or

(4) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking official.

Room enclosure means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.

Source, for purposes of this subpart, means each dry cleaning system.

Still means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

Temperature sensor means a thermometer or thermocouple used to measure temperature.

Transfer machine system means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:

(1) A washer and dryer(s);

(2) A washer and reclaimer(s); or

(3) A dry-to-dry machine and reclaimer(s).

Washer means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.

Water separator means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

Year or *Yearly* means any consecutive 12-month period of time.

§ 63.322 Standards.

(a) The owner or operator of each existing dry cleaning system and of each new transfer machine system and its ancillary equipment installed between December 9, 1991 and September 22, 1993 shall comply with either paragraph (a)(1) or (a)(2) of this section and shall comply with paragraph (a)(3) of this section if applicable.

(1) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device.

(2) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a carbon adsorber installed on the dry cleaning machine prior to September 22, 1993.

(3) Contain the dry cleaning machine inside a room enclosure if the dry cleaning machine is a transfer machine system located at a major source. Each room enclosure shall be:

(i) Constructed of materials impermeable to perchloroethylene; and

(ii) Designed and operated to maintain a negative pressure at each opening at all times that the machine is operating.

(b) The owner or operator of each new dry-to-dry machine and its ancillary equipment and of each new transfer machine system and its ancillary equipment installed after September 22, 1993:

(1) Shall route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device;

(2) Shall eliminate any emission of perchloroethylene during the transfer of articles between the washer and dryer(s); and

(3) Shall pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.

(c) The owner or operator shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times.

(d) The owner or operator of each dry cleaning system shall operate and maintain the system according to the manufacturers' specifications and recommendations.

(e) Each refrigerated condenser used for the purposes of complying with paragraph (a) or (b) of this section and

installed on a dry-to-dry machine, dryer, or reclaimer:

(1) Shall be operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating;

(2) Shall be monitored according to § 63.323(a)(1); and

(3) Shall be operated with a diverter valve, which prevents air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.

(f) Each refrigerated condenser used for the purpose of complying with paragraph (a) of this section and installed on a washer:

(1) Shall be operated to not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened;

(2) Shall be monitored according to § 63.323(a)(2); and

(3) Shall not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer, or reclaimer.

(g) Each carbon adsorber used for the purposes of complying with paragraph (a) or (b) of this section:

(1) Shall not be bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time; and

(2) Shall be monitored according to the applicable requirements in § 63.323(b) or (c).

(h) Each room enclosure used for the purposes of complying with paragraph (a)(3) of this section:

(1) Shall be operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device; and

(2) Shall be equipped with a carbon adsorber that is not the same carbon adsorber used to comply with paragraph (a)(2) or (b)(3) of this section.

(i) The owner or operator of an affected facility shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.

(j) The owner or operator of an affected facility shall store all

perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.

(k) The owner or operator of a dry cleaning system shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating:

(1) Hose and pipe connections, fittings, couplings, and valves;

(2) Door gaskets and seatings;

(3) Filter gaskets and seatings;

(4) Pumps;

(5) Solvent tanks and containers;

(6) Water separators;

(7) Muck cookers;

(8) Stills;

(9) Exhaust dampers;

(10) Diverter valves; and

(11) Cartridge filter housings.

(l) The owner or operator of a dry cleaning facility with a total facility consumption below the applicable consumption levels of § 63.320(d) or (e) shall inspect the components listed in paragraph (k) of this section biweekly for perceptible leaks while the dry cleaning system is operating.

(m) The owner or operator of a dry cleaning system shall repair all perceptible leaks detected under paragraph (k) of this section within 24 hours. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within 2 working days of detecting such a leak. Such repair parts shall be installed within 5 working days after receipt.

(n) If parameter values monitored under paragraphs (e), (f), or (g) of this section do not meet the values specified in § 63.323(a), (b), or (c), adjustments or repairs shall be made to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within 2 working days of detecting such a parameter value. Such repair parts shall be installed within 5 working days after receipt.

[58 FR 49376, Sept. 22, 1993, as amended at 61 FR 49265, Sept. 19, 1996]

§ 63.323 Test methods and monitoring.

(a) When a refrigerated condenser is used to comply with § 63.322(a)(1) or (b)(1):

(1) The owner or operator shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer weekly with a temperature sensor to determine if it is equal to or less than 7.2 °C (45 °F). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2 °C (45 °F) to an accuracy of ± 1.1 °C (± 2 °F).

(2) The owner or operator shall calculate the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the temperature of the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1 °C (20 °F).

(i) Measurements of the inlet and outlet streams shall be made with a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 0 °C (32 °F) to 48.9 °C (120 °F) to an accuracy of ± 1.1 °C (± 2 °F).

(ii) The difference between the inlet and outlet temperatures shall be calculated weekly from the measured values.

(b) When a carbon adsorber is used to comply with § 63.322(a)(2) or exhaust is passed through a carbon adsorber immediately upon machine door opening to comply with § 63.322(b)(3), the owner or operator shall measure the concentration of perchloroethylene in the exhaust of the carbon adsorber weekly with a colorimetric detector tube, while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 parts per million by volume. The owner or operator shall:

(1) Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of ± 25 parts per million by volume; and

(2) Use the colorimetric detector tube according to the manufacturer's instructions; and

(3) Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet, or outlet.

(c) If the air-perchloroethylene gas-vapor stream is passed through a carbon adsorber prior to machine door opening to comply with § 63.322(b)(3), the owner or operator of an affected facility shall measure the concentration of perchloroethylene in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube to determine that the perchloroethylene concentration is equal to or less than 300 parts per million by volume. The owner or operator shall:

(1) Use a colorimetric detector tube designed to measure a concentration of 300 parts per million by volume of perchloroethylene in air to an accuracy of ± 75 parts per million by volume; and

(2) Use the colorimetric detector tube according to the manufacturer's instructions; and

(3) Conduct the weekly monitoring by inserting the colorimetric detector tube into the open space above the articles at the rear of the dry cleaning machine drum immediately upon opening the dry cleaning machine door.

(d) When calculating yearly perchloroethylene consumption for the purpose of demonstrating applicability according to § 63.320, the owner or operator shall perform the following calculation on the first day of every month:

(1) Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in § 63.324(d)(1).

(2) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons.

(3) The total sum calculated in paragraph (d) of this section is the yearly perchloroethylene consumption at the facility.

§ 63.324 Reporting and recordkeeping requirements.

(a) Each owner or operator of a dry cleaning facility shall notify the Administrator or delegated State authority in writing within 270 calendar days after September 23, 1993 (i.e., June 18, 1994) and provide the following information:

(1) The name and address of the owner or operator;

(2) The address (that is, physical location) of the dry cleaning facility;

(3) A brief description of the type of each dry cleaning machine at the dry cleaning facility;

(4) Documentation as described in § 63.323(d) of the yearly perchloroethylene consumption at the dry cleaning facility for the previous year to demonstrate applicability according to § 63.320; or an estimation of perchloroethylene consumption for the previous year to estimate applicability with § 63.320; and

(5) A description of the type of control device(s) that will be used to achieve compliance with § 63.322 (a) or (b) and whether the control device(s) is currently in use or will be purchased.

(6) Documentation to demonstrate to the Administrator's satisfaction that each room enclosure used to meet the requirements of § 63.322(a)(3) meets the requirements of § 63.322(a)(3) (i) and (ii).

(b) Each owner or operator of a dry cleaning facility shall submit to the Administrator or delegated State authority by registered mail on or before the 30th day following the compliance dates specified in § 63.320 (b) or (c) or June 18, 1994, whichever is later, a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

(1) The yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to § 63.323(d);

(2) Whether or not they are in compliance with each applicable requirement of § 63.322; and

(3) All information contained in the statement is accurate and true.

(c) Each owner or operator of an area source dry cleaning facility that exceeds the solvent consumption limit reported in paragraph (b) of this section shall submit to the Administrator or a delegated State authority by registered mail on or before the dates specified in § 63.320 (f) or (i), a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

(1) The new yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to § 63.323(d);

(2) Whether or not they are in compliance with each applicable requirement of § 63.322; and

(3) All information contained in the statement is accurate and true.

(d) Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of the following information and maintain such information on site and show it upon request for a period of 5 years:

(1) The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases; if no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log;

(2) The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in § 63.323(d);

(3) The dates when the dry cleaning system components are inspected for perceptible leaks, as specified in § 63.322(k) or (l), and the name or location of dry cleaning system components where perceptible leaks are detected;

(4) The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with § 63.322(m) and (n);

(5) The date and temperature sensor monitoring results, as specified in § 63.323 if a refrigerated condenser is used to comply with § 63.322(a) or (b); and

(6) The date and colorimetric detector tube monitoring results, as specified in § 63.323, if a carbon adsorber is used to comply with § 63.322(a)(2) or (b)(3).

(e) Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.

[58 FR 49376, Sept. 22, 1993, as amended at 58 FR 66289, Dec. 20, 1993]

§ 63.325 Determination of equivalent emission control technology.

(a) Any person requesting that the use of certain equipment or procedures be considered equivalent to the requirements under § 63.322 shall collect, verify, and submit to the Administrator the following information to show that the alternative achieves equivalent emission reductions:

(1) Diagrams, as appropriate, illustrating the emission control technology, its operation and integration into or function with dry-to-dry machine(s) or transfer machine system(s) and their ancillary equipment during each portion of the normal dry cleaning cycle;

(2) Information quantifying vented perchloroethylene emissions from the dry-to-dry machine(s) or transfer machine system(s) during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology;

(3) Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of perchloroethylene used. Solvent mileage data must be of continuous duration for at least 1 year under the conditions of a typical dry cleaning operation. This information on solvent mileage must be accompanied by information on the design, configuration, operation, and maintenance of the specific dry cleaning system from which the solvent mileage information was obtained;

(4) Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance

of the candidate emission control technology;

(5) Explanation of why this information is considered accurate and representative of both the short-term and the long-term performance of the candidate emission control technology on the specific dry cleaning system examined;

(6) Explanation of why this information can or cannot be extrapolated to dry cleaning systems other than the specific system(s) examined; and

(7) Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.

(b) For the purpose of determining equivalency to control equipment required under § 63.322, the Administrator will evaluate the petition to determine whether equivalent control of perchloroethylene emissions has been adequately demonstrated.

(c) Where the Administrator determines that certain equipment and procedures may be equivalent, the Administrator will publish a notice in the FEDERAL REGISTER proposing to consider this equipment or these procedures as equivalent. After notice and opportunity for public hearing, the Administrator will publish the final determination of equivalency in the FEDERAL REGISTER.

Subpart N—National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks

SOURCE: 60 FR 4963, Jan. 25, 1995, unless otherwise noted.

§ 63.340 Applicability and designation of sources.

(a) The affected source to which the provisions of this subpart apply is each chromium electroplating or chromium anodizing tank at facilities performing hard chromium electroplating, decorative chromium electroplating, or chromium anodizing.

(b) Owners or operators of affected sources subject to the provisions of this subpart must also comply with the requirements of subpart A of this part, according to the applicability of subpart A of this part to such sources, as identified in Table 1 of this subpart.

(c) Process tanks associated with a chromium electroplating or chromium anodizing process, but in which neither chromium electroplating nor chromium anodizing is taking place, are not subject to the provisions of this subpart. Examples of such tanks include, but are not limited to, rinse tanks, etching tanks, and cleaning tanks. Likewise, tanks that contain a chromium solution, but in which no electrolytic process occurs, are not subject to this subpart. An example of such a tank is a chrome conversion coating tank where no electrical current is applied.

(d) Affected sources in which research and laboratory operations are performed are exempt from the provisions of this subpart when such operations are taking place.

(e)(1) The Administrator has determined, pursuant to the criteria under section 502(a) of the Act, that an owner or operator of the following types of operations that are not by themselves major sources and that are not located at major sources, as defined under 40 CFR 70.2, is permanently exempt from title V permitting requirements for that operation:

(i) Any decorative chromium electroplating operation or chromium anodizing operation that uses fume suppressants as an emission reduction technology; and

(ii) Any decorative chromium electroplating operation that uses a trivalent chromium bath that incorporates a wetting agent as a bath ingredient.

(2) An owner or operator of any other affected source subject to the provisions of this subpart is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR 70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e.,

until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must meet the compliance schedule as stated in § 63.343.

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

§ 63.341 Definitions and nomenclature.

(a) *Definitions.* Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section. For the purposes of subpart N of this part, if the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section.

Add-on air pollution control device means equipment installed in the ventilation system of chromium electroplating and anodizing tanks for the purposes of collecting and containing chromium emissions from the tank(s).

Air pollution control technique means any method, such as an add-on air pollution control device or a chemical fume suppressant, that is used to reduce chromium emissions from chromium electroplating and chromium anodizing tanks.

Base metal means the metal or metal alloy that comprises the workpiece.

Bath component means the trade or brand name of each component(s) in trivalent chromium plating baths. For trivalent chromium baths, the bath composition is proprietary in most cases. Therefore, the trade or brand name for each component(s) can be used; however, the chemical name of the wetting agent contained in that component must be identified.

Chemical fume suppressant means any chemical agent that reduces or suppresses fumes or mists at the surface of an electroplating or anodizing bath; another term for fume suppressant is mist suppressant.

Chromic acid means the common name for chromium anhydride (CrO₃).

Chromium anodizing means the electrolytic process by which an oxide layer is produced on the surface of a base metal for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. In chromium anodizing, the part

to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.

Chromium electroplating or chromium anodizing tank means the receptacle or container in which hard or decorative chromium electroplating or chromium anodizing occurs.

Composite mesh-pad system means an add-on air pollution control device typically consisting of several mesh-pad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any reentrained particles not collected by the composite mesh pad.

Decorative chromium electroplating means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance. In this process, the part(s) serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Typical current density applied during this process ranges from 540 to 2,400 Amperes per square meter (A/m²) for total plating times ranging between 0.5 to 5 minutes.

Electroplating or anodizing bath means the electrolytic solution used as the conducting medium in which the flow of current is accompanied by movement of metal ions for the purposes of electroplating metal out of the solution onto a workpiece or for oxidizing the base material.

Emission limitation means, for the purposes of this subpart, the concentration of total chromium allowed to be emitted expressed in milligrams per dry standard cubic meter (mg/dscm), or the allowable surface tension expressed in dynes per centimeter (dynes/cm).

Facility means the major or area source at which chromium electroplating or chromium anodizing is performed.

Fiber-bed mist eliminator means an add-on air pollution control device that removes contaminants from a gas stream through the mechanisms of inertial impaction and Brownian diffusion. These devices are typically in-

stalled downstream of another control device, which serves to prevent plugging, and consist of one or more fiber beds. Each bed consists of a hollow cylinder formed from two concentric screens; the fiber between the screens may be fabricated from glass, ceramic plastic, or metal.

Foam blanket means the type of chemical fume suppressant that generates a layer of foam across the surface of a solution when current is applied to that solution.

Fresh water means water, such as tap water, that has not been previously used in a process operation or, if the water has been recycled from a process operation, it has been treated and meets the effluent guidelines for chromium wastewater.

Hard chromium electroplating or industrial chromium electroplating means a process by which a thick layer of chromium (typically 1.3 to 760 microns) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500 A/m² for total plating times ranging from 20 minutes to 36 hours depending upon the desired plate thickness.

Hexavalent chromium means the form of chromium in a valence state of +6.

Large, hard chromium electroplating facility means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity greater than or equal to 60 million ampere-hours per year (amp-hr/yr).

Maximum cumulative potential rectifier capacity means the summation of the total installed rectifier capacity associated with the hard chromium electroplating tanks at a facility, expressed in amperes, multiplied by the maximum potential operating schedule of 8,400 hours per year and 0.7, which assumes that electrodes are energized 70 percent of the total operating time. The maximum potential operating schedule is

based on operating 24 hours per day, 7 days per week, 50 weeks per year.

Operating parameter value means a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator is in continual compliance with the applicable emission limitation or standard.

Packed-bed scrubber means an add-on air pollution control device consisting of a single or double packed bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.

Research or laboratory operation means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and that is not involved in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

Small, hard chromium electroplating facility means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity less than 60 million amp-hr/yr.

Stalagmometer means a device used to measure the surface tension of a solution.

Surface tension means the property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent liquid from spreading.

Tank operation means the time in which current and/or voltage is being applied to a chromium electroplating tank or a chromium anodizing tank.

Tensiometer means a device used to measure the surface tension of a solution.

Trivalent chromium means the form of chromium in a valence state of +3.

Trivalent chromium process means the process used for electrodeposition of a thin layer of chromium onto a base material using a trivalent chromium solution instead of a chromic acid solution.

Wetting agent means the type of chemical fume suppressant that reduces the surface tension of a liquid.

(b) *Nomenclature.* The nomenclature used in this subpart has the following meaning:

(1) AMR=the allowable mass emission rate from each type of affected source subject to the same emission limitation in milligrams per hour (mg/hr).

(2) AMR_{sys}=the allowable mass emission rate from affected sources controlled by an add-on air pollution control device controlling emissions from multiple sources in mg/hr.

(3) EL=the applicable emission limitation from § 63.342 in milligrams per dry standard cubic meter (mg/dscm).

(4) IA_{total}=the sum of all inlet duct areas from both affected and non-affected sources in meters squared.

(5) IDA_t=the total inlet area for all ducts associated with affected sources in meters squared.

(6) IDA_{i,a}=the total inlet duct area for all ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation in meters squared.

(7) VR=the total of ventilation rates for each type of affected source subject to the same emission limitation in dry standard cubic meters per minute (dscm/min).

(8) VR_{inlet}=the total ventilation rate from all inlet ducts associated with affected sources in dscm/min.

(9) VR_{inlet,a}=the total ventilation rate from all inlet ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation in dscm/min.

(10) VR_{tot}=the average total ventilation rate for the three test runs as determined at the outlet by means of the Method 306 in appendix A of this part testing in dscm/min.

§ 63.342 Standards.

(a) Each owner or operator of an affected source subject to the provisions of this subpart shall comply with these requirements on and after the compliance dates specified in § 63.343(a). All affected sources are regulated by applying maximum achievable control technology.

(b) *Applicability of emission limits.* (1) The emission limitations in this section apply only during tank operation, and also apply during periods of start-up and shutdown as these are routine occurrences for affected sources subject to this subpart. The emission limitations do not apply during periods of malfunction, but the work practice standards that address operation and maintenance and that are required by paragraph (f) of this section must be followed during malfunctions.

(2) If an owner or operator is controlling a group of tanks with a common add-on air pollution control device, the emission limitations of paragraphs (c), (d), and (e) of this section apply whenever any one affected source is operated. The emission limitation that applies to the group of affected sources is:

(i) The emission limitation identified in paragraphs (c), (d), and (e) of this section if the affected sources are performing the same type of operation (e.g., hard chromium electroplating), are subject to the same emission limitation, and are not controlled by an add-on air pollution control device also controlling nonaffected sources;

(ii) The emission limitation calculated according to § 63.344(e)(3) if affected sources are performing the same type of operation, are subject to the same emission limitation, and are controlled with an add-on air pollution control device that is also controlling nonaffected sources; and

(iii) The emission limitation calculated according to § 63.344(e)(4) if affected sources are performing different types of operations, or affected sources are performing the same operations but subject to different emission limitations, and are controlled with an add-on air pollution control device that may also be controlling emissions from nonaffected sources.

(c)(1) *Standards for hard chromium electroplating tanks.* During tank operation, each owner or operator of an existing, new, or reconstructed affected source shall control chromium emissions discharged to the atmosphere from that affected source by not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed:

(i) 0.015 milligrams of total chromium per dry standard cubic meter (mg/dscm) of ventilation air (6.6×10^{-6} grains per dry standard cubic foot [gr/dscf]); or

(ii) 0.03 mg/dscm (1.3×10^{-5} gr/dscf) if the hard chromium electroplating tank is an existing affected source and is located at a small, hard chromium electroplating facility.

(2)(i) An owner or operator may demonstrate the size of a hard chromium electroplating facility through the definitions in § 63.341(a). Alternatively, an owner or operator of a facility with a maximum cumulative potential rectifier capacity of 60 million amp-hr/yr or more may be considered small if the actual cumulative rectifier capacity is less than 60 million amp-hr/yr as demonstrated using the following procedures:

(A) If records show that the facility's previous annual actual rectifier capacity was less than 60 million amp-hr/yr, by using nonresettable ampere-hr meters and keeping monthly records of actual ampere-hr usage for each 12-month rolling period following the compliance date in accordance with § 63.346(b)(12). The actual cumulative rectifier capacity for the previous 12-month rolling period shall be tabulated monthly by adding the capacity for the current month to the capacities for the previous 11 months; or

(B) By accepting a Federally-enforceable limit on the maximum cumulative potential rectifier capacity of a hard chromium electroplating facility and by maintaining monthly records in accordance with § 63.346(b)(12) to demonstrate that the limit has not been exceeded. The actual cumulative rectifier capacity for the previous 12-month rolling period shall be tabulated monthly by adding the capacity for the current month to the capacities for the previous 11 months.

(ii) Once the monthly records required to be kept by § 63.346(b)(12) and by this paragraph show that the actual cumulative rectifier capacity over the previous 12-month rolling period corresponds to the large designation, the owner or operator is subject to the

emission limitation identified in paragraph (c)(1)(i) of this section, in accordance with the compliance schedule of § 63.343(a)(5).

(d) *Standards for decorative chromium electroplating tanks using a chromic acid bath and chromium anodizing tanks.* During tank operation, each owner or operator of an existing, new, or reconstructed affected source shall control chromium emissions discharged to the atmosphere from that affected source by either:

(1) Not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed 0.01 mg/dscm (4.4×10^{-6} gr/dscf); or

(2) If a chemical fume suppressant containing a wetting agent is used, by not allowing the surface tension of the electroplating or anodizing bath contained within the affected source to exceed 45 dynes per centimeter (dynes/cm) (3.1×10^{-3} pound-force per foot [lb_f/ft]) at any time during operation of the tank.

(e) *Standards for decorative chromium electroplating tanks using a trivalent chromium bath.* (1) Each owner or operator of an existing, new, or reconstructed decorative chromium electroplating tank that uses a trivalent chromium bath that incorporates a wetting agent as a bath ingredient is subject to the recordkeeping and reporting requirements of §§ 63.346(b)(14) and 63.347(i), but are not subject to the work practice requirements of paragraph (f) of this section, or the continuous compliance monitoring requirements in § 63.343(c). The wetting agent must be an ingredient in the trivalent chromium bath components purchased from vendors.

(2) Each owner or operator of an existing, new, or reconstructed decorative chromium electroplating tank that uses a trivalent chromium bath that does not incorporate a wetting agent as a bath ingredient is subject to the standards of paragraph (d) of this section.

(3) Each owner or operator of existing, new, or reconstructed decorative chromium electroplating tank that had been using a trivalent chromium bath that incorporates a wetting agent and ceases using this type of bath must ful-

fill the reporting requirements of § 63.347(i)(3) and comply with the applicable emission limitation within the timeframe specified in § 63.343(a)(7).

(f) *Work practice standards.* The work practice standards of this section address operation and maintenance practices. All owners or operators subject to the standards in paragraphs (c) and (d) of this section are subject to these work practice standards.

(1)(i) At all times, including periods of startup, shutdown, and malfunction, owners or operators shall operate and maintain any affected source, including associated air pollution control devices and monitoring equipment, in a manner consistent with good air pollution control practices, consistent with the operation and maintenance plan required by paragraph (f)(3) of this section.

(ii) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the operation and maintenance plan required by paragraph (f)(3) of this section.

(iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(2)(i) Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results; review of the operation and maintenance plan, procedures, and records; and inspection of the source.

(ii) Based on the results of a determination made under paragraph (f)(2)(i) of this section, the Administrator may require that an owner or operator of an affected source make changes to the operation and maintenance plan required by paragraph (f)(3) of this section for that source. Revisions may be required if the Administrator finds that the plan:

(A) Does not address a malfunction that has occurred;

(B) Fails to provide for the operation of the affected source, the air pollution control techniques, or the control system and process monitoring equipment

during a malfunction in a manner consistent with good air pollution control practices; or

(C) Does not provide adequate procedures for correcting malfunctioning process equipment, air pollution control techniques, or monitoring equipment as quickly as practicable.

(3) *Operation and maintenance plan.* (i) The owner or operator of an affected source subject to the work practices of paragraph (f) of this section shall prepare an operation and maintenance plan to be implemented no later than the compliance date, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998. The plan shall be incorporated by reference into the source's title V permit, if and when a title V permit is required. The plan shall include the following elements:

(A) The plan shall specify the operation and maintenance criteria for the affected source, the add-on air pollution control device (if such a device is used to comply with the emission limits), and the process and control system monitoring equipment, and shall include a standardized checklist to document the operation and maintenance of this equipment;

(B) For sources using an add-on air pollution control device or monitoring equipment to comply with this subpart, the plan shall incorporate the work practice standards for that device or monitoring equipment, as identified in Table 1 of this section, if the specific equipment used is identified in Table 1 of this section;

(C) If the specific equipment used is not identified in Table 1 of this section, the plan shall incorporate proposed work practice standards. These proposed work practice standards shall be submitted to the Administrator for approval as part of the submittal required under § 63.343(d);

(D) The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and

(E) The plan shall include a systematic procedure for identifying malfunctions of process equipment, add-on air pollution control devices, and process

and control system monitoring equipment and for implementing corrective actions to address such malfunctions.

(ii) If the operation and maintenance plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the operation and maintenance plan within 45 days after such an event occurs. The revised plan shall include procedures for operating and maintaining the process equipment, add-on air pollution control device, or monitoring equipment during similar malfunction events, and a program for corrective action for such events.

(iii) Recordkeeping associated with the operation and maintenance plan is identified in § 63.346(b). Reporting associated with the operation and maintenance plan is identified in § 63.347 (g) and (h) and paragraph (f)(3)(iv) of this section.

(iv) If actions taken by the owner or operator during periods of malfunction are inconsistent with the procedures specified in the operation and maintenance plan required by paragraph (f)(3)(i) of this section, the owner or operator shall record the actions taken for that event and shall report by phone such actions within 2 working days after commencing actions inconsistent with the plan. This report shall be followed by a letter within 7 working days after the end of the event, unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator.

(v) The owner or operator shall keep the written operation and maintenance plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of the affected source or until the source is no longer subject to the provisions of this subpart. In addition, if the operation and maintenance plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the operation and maintenance plan on record to be made available for inspection, upon request, by the Administrator for a period of 5 years after each revision to the plan.

(vi) To satisfy the requirements of paragraph (f)(3) of this section, the

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owner or operator may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this section.

(g) The standards in this section that apply to chromic acid baths shall not be met by using a reducing agent to change the form of chromium from hexavalent to trivalent.

TABLE 1 TO § 63.342.—Summary of Work Practice Standards

Control technique	Work practice standards	Frequency
Composite mesh-pad (CMP) system	1. Visually inspect device to ensure there is proper drainage, no chronic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device. 2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.	1. 1/quarter. 2. 1/quarter.
Packed-bed scrubber (PSB)	3. Visually inspect ductwork from tank to the control device to ensure there are no leaks 4. Perform washdown of the composite mesh-pads in accordance with manufacturers recommendations 1. Visually inspect device to ensure there is proper drainage, no chronic acid buildup on the packed beds, and no evidence of chemical attack on the structural integrity of the device. 2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist. 3. Same as number 3 above 4. Add fresh makeup water to the top of the packed bed ^{a, b}	3. 1/quarter. 4. Whenever makeup is added. 1. 1/quarter. 2. 1/quarter. 3. 1/quarter. 4. Per manufacturer. 1. 1/quarter.
PBS/CMP system	1. Same as for CMP system 2. Same as for CMP system 3. Same as for CMP system 4. Same as for CMP system	1. 1/quarter. 2. 1/quarter. 3. 1/quarter. 4. Per manufacturer.
Fiber-bed mist eliminator ^c	1. Visually inspect fiber-bed unit and prefiltering device to ensure there is proper drainage, no chromic acid buildup in the units, and no evidence of chemical attack on the structural integrity of the devices. 2. Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks 3. Perform washdown of fiber elements in accordance with manufacturers recommendations To be proposed by the source for approval by the Administrator	2. 1/quarter. 3. Per manufacturer. To be proposed by the source for approval by the Administrator.
Air pollution control device (APCD) not listed in rule.		

Monitoring Equipment

Pitot tube	Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check pitot tube ends for damage. Replace pitot tube if cracked or fatigued.	1/quarter.
Stalagmometer	Follow manufacturers recommendations	

^aIf greater than 50 percent of the scrubber water is drained (e.g., for maintenance purposes), makeup water may be added to the scrubber basin.
^bFor horizontal-flow scrubbers, top is defined as the section of the unit directly above the packing media such that the makeup water would flow perpendicular to the air flow through the packing. For vertical-flow units, the top is defined as the area downstream of the packing material such that the makeup water would flow countercurrent to the air flow through the unit.
^cWork practice standards for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the work practice standards for the fiber-bed unit are followed.

[60 FR 4963, Jan. 25, 1995; 60 FR 33122, June 27, 1995, as amended at 61 FR 27787, June 3, 1996; 62 FR 42920, Aug. 11, 1997]

§ 63.343 Compliance provisions.

(a) *Compliance dates.* (1) The owner or operator of an existing affected source shall comply with the emission limitations in § 63.342 as follows:

(i) No later than 1 year after January 25, 1995, if the affected source is a decorative chromium electroplating tank; and

(ii) No later than 2 years after January 25, 1995, if the affected source is a hard chromium electroplating tank or a chromium anodizing tank.

(2) The owner or operator of a new or reconstructed affected source that has an initial startup after January 25, 1995, shall comply immediately upon startup of the source. The owner or operator of a new or reconstructed affected source that has an initial startup after December 16, 1993 but before January 25, 1995, shall follow the compliance schedule of § 63.6(b)(1).

(3) The owner or operator of an existing area source that increases actual or potential emissions of hazardous air pollutants such that the area source becomes a major source must comply with the provisions for existing major sources, including the reporting provisions of § 63.347(g), immediately upon becoming a major source.

(4) The owner or operator of a new area source (i.e., an area source for which construction or reconstruction was commenced after December 16, 1993) that increases actual or potential emissions of hazardous air pollutants such that the area source becomes a major source must comply with the provisions for new major sources, immediately upon becoming a major source.

(5) An owner or operator of an existing hard chromium electroplating tank or tanks located at a small, hard chromium electroplating facility that increases its maximum cumulative potential rectifier capacity, or its actual cumulative rectifier capacity, such that the facility becomes a large, hard chromium electroplating facility must comply with the requirements of § 63.342(c)(1)(i) for all hard chromium electroplating tanks at the facility no later than 1 year after the month in which monthly records required by §§ 63.342(c)(2) and 63.346(b)(12) show that the large designation is met, or by the

compliance date specified in paragraph (a)(1)(ii) of this section, whichever is later.

(6) *Request for an extension of compliance.* An owner or operator of an affected source or sources that requests an extension of compliance shall do so in accordance with this paragraph and the applicable paragraphs of § 63.6(i). When the owner or operator is requesting the extension for more than one affected source located at the facility, then only one request may be submitted for all affected sources at the facility.

(i) The owner or operator of an existing affected source who is unable to comply with a relevant standard under this subpart may request that the Administrator (or a State, when the State has an approved part 70 permit program and the source is required to obtain a part 70 permit under that program, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) grant an extension allowing the owner or operator up to 1 additional year to comply with the standard for the affected source. The owner or operator of an affected source who has requested an extension of compliance under this paragraph and is otherwise required to obtain a title V permit for the source shall apply for such permit or apply to have the title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph will be incorporated into the owner or operator's title V permit for the affected source(s) according to the provisions of 40 CFR part 70 or 40 CFR part 71, whichever is applicable.

(ii) Any request under this paragraph for an extension of compliance with a relevant standard shall be submitted in writing to the appropriate authority not later than 6 months before the affected source's compliance date as specified in this section.

(7) An owner or operator of a decorative chromium electroplating tank that uses a trivalent chromium bath that incorporates a wetting agent, and that ceases using the trivalent chromium process, must comply with the emission limitation now applicable to

the tank within 1 year of switching bath operation.

(b) *Methods to demonstrate initial compliance.*

(1) Except as provided in paragraphs (b)(2) and (b)(3) of this section, an owner or operator of an affected source subject to the requirements of this subpart is required to conduct an initial performance test as required under § 63.7, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998, using the procedures and test methods listed in §§ 63.7 and 63.344.

(2) If the owner or operator of an affected source meets all of the following criteria, an initial performance test is not required to be conducted under this subpart:

(i) The affected source is a decorative chromium electroplating tank or a chromium anodizing tank; and

(ii) A wetting agent is used in the plating or anodizing bath to inhibit chromium emissions from the affected source; and

(iii) The owner or operator complies with the applicable surface tension limit of § 63.342(d)(2) as demonstrated through the continuous compliance monitoring required by paragraph (c)(5)(ii) of this section.

(3) If the affected source is a decorative chromium electroplating tank using a trivalent chromium bath, and the owner or operator is subject to the provisions of § 63.342(e), an initial performance test is not required to be conducted under this subpart.

(c) *Monitoring to demonstrate continuous compliance.* The owner or operator of an affected source subject to the emission limitations of this subpart shall conduct monitoring according to the type of air pollution control technique that is used to comply with the emission limitation. The monitoring required to demonstrate continuous compliance with the emission limitations is identified in this section for the air pollution control techniques expected to be used by the owners or operators of affected sources.

(1) *Composite mesh-pad systems.* (i) During the initial performance test, the owner or operator of an affected source, or a group of affected sources

under common control, complying with the emission limitations in § 63.342 through the use of a composite mesh-pad system shall determine the outlet chromium concentration using the test methods and procedures in § 63.344(c), and shall establish as a site-specific operating parameter the pressure drop across the system, setting the value that corresponds to compliance with the applicable emission limitation, using the procedures in § 63.344(d)(5). An owner or operator may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliant value the average pressure drop measured over the three test runs of one performance test and accept ± 1 inch of water column from this value as the compliant range.

(ii) On and after the date on which the initial performance test is required to be completed under § 63.7, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998, the owner or operator of an affected source, or group of affected sources under common control, shall monitor and record the pressure drop across the composite mesh-pad system once each day that any affected source is operating. To be in compliance with the standards, the composite mesh-pad system shall be operated within ± 1 inch of water column of the pressure drop value established during the initial performance test, or shall be operated within the range of compliant values for pressure drop established during multiple performance tests.

(2) *Packed-bed scrubber systems.* (i) During the initial performance test, the owner or operator of an affected source, or group of affected sources under common control, complying with the emission limitations in § 63.342 through the use of a packed-bed scrubber system shall determine the outlet chromium concentration using the procedures in § 63.344(c), and shall establish as site-specific operating parameters the pressure drop across the system and the velocity pressure at the common inlet of the control device, setting the value that corresponds to compliance with the applicable emission limitation using the procedures in

§ 63.344(d) (4) and (5). An owner or operator may conduct multiple performance tests to establish a range of compliant operating parameter values. Alternatively, the owner or operator may set as the compliant value the average pressure drop and inlet velocity pressure measured over the three test runs of one performance test, and accept ± 1 inch of water column from the pressure drop value and ± 10 percent from the velocity pressure value as the compliant range.

(ii) On and after the date on which the initial performance test is required to be completed under § 63.7, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998, the owner or operator of an affected source, or group of affected sources under common control, shall monitor and record the velocity pressure at the inlet to the packed-bed system and the pressure drop across the scrubber system once each day that any affected source is operating. To be in compliance with the standards, the scrubber system shall be operated within ± 10 percent of the velocity pressure value established during the initial performance test, and within ± 1 inch of water column of the pressure drop value established during the initial performance test, or within the range of compliant operating parameter values established during multiple performance tests.

(3) *Packed-bed scrubber/composite mesh-pad system.* The owner or operator of an affected source, or group of affected sources under common control, that uses a packed-bed scrubber in conjunction with a composite mesh-pad system to meet the emission limitations of § 63.342 shall comply with the monitoring requirements for composite mesh-pad systems as identified in paragraph (c)(1) of this section.

(4) *Fiber-bed mist eliminator.* (i) During the initial performance test, the owner or operator of an affected source, or group of affected sources under common control, complying with the emission limitations in § 63.342 through the use of a fiber-bed mist eliminator shall determine the outlet chromium concentration using the procedures in § 63.344(c), and shall establish as a site-

specific operating parameter the pressure drop across the fiber-bed mist eliminator and the pressure drop across the control device installed upstream of the fiber bed to prevent plugging, setting the value that corresponds to compliance with the applicable emission limitation using the procedures in § 63.344(d)(5). An owner or operator may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliant value the average pressure drop measured over the three test runs of one performance test and accept ± 1 inch of water column from this value as the compliant range.

(ii) On and after the date on which the initial performance test is required to be completed under § 63.7, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998, the owner or operator of an affected source, or group of affected sources under common control, shall monitor and record the pressure drop across the fiber-bed mist eliminator, and the control device installed upstream of the fiber bed to prevent plugging, once each day that any affected source is operating. To be in compliance with the standards, the fiber-bed mist eliminator and the upstream control device shall be operated within ± 1 inch of water column of the pressure drop value established during the initial performance test, or shall be operated within the range of compliant values for pressure drop established during multiple performance tests.

(5) *Wetting agent-type or combination wetting agent-type/foam blanket fume suppressants.* (i) During the initial performance test, the owner or operator of an affected source complying with the emission limitations in § 63.342 through the use of a wetting agent in the electroplating or anodizing bath shall determine the outlet chromium concentration using the procedures in § 63.344(c). The owner or operator shall establish as the site-specific operating parameter the surface tension of the bath using Method 306B, appendix A of this part, setting the maximum value that corresponds to compliance with the applicable emission limitation. In

lieu of establishing the maximum surface tension during the performance test, the owner or operator may accept 45 dynes/cm as the maximum surface tension value that corresponds to compliance with the applicable emission limitation. However, the owner or operator is exempt from conducting a performance test only if the criteria of paragraph (b)(2) of this section are met.

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998, the owner or operator of an affected source shall monitor the surface tension of the electroplating or anodizing bath. Operation of the affected source at a surface tension greater than the value established during the performance test, or greater than 45 dynes/cm if the owner or operator is using this value in accordance with paragraph (c)(5)(i) of this section, shall constitute noncompliance with the standards. The surface tension shall be monitored according to the following schedule:

(A) The surface tension shall be measured once every 4 hours during operation of the tank with a stalagmometer or a tensiometer as specified in Method 306B, appendix A of this part.

(B) The time between monitoring can be increased if there have been no exceedances. The surface tension shall be measured once every 4 hours of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 8 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. The minimum frequency of monitoring allowed by this subpart is once every 40 hours of tank operation.

(C) Once an exceedance occurs as indicated through surface tension monitoring, the original monitoring schedule of once every 4 hours must be resumed. A subsequent decrease in fre-

quency shall follow the schedule laid out in paragraph (c)(5)(ii)(B) of this section. For example, if an owner or operator had been monitoring an affected source once every 40 hours and an exceedance occurs, subsequent monitoring would take place once every 4 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation, monitoring can occur once every 8 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation on this schedule, monitoring can occur once every 40 hours of tank operation.

(iii) Once a bath solution is drained from the affected tank and a new solution added, the original monitoring schedule of once every 4 hours must be resumed, with a decrease in monitoring frequency allowed following the procedures of paragraphs (c)(5)(ii) (B) and (C) of this section.

(6) *Foam blanket-type fume suppressants.* (i) During the initial performance test, the owner or operator of an affected source complying with the emission limitations in §63.342 through the use of a foam blanket in the electroplating or anodizing bath shall determine the outlet chromium concentration using the procedures in §63.344(c), and shall establish as the site-specific operating parameter the thickness of the foam blanket, setting the minimum thickness that corresponds to compliance with the applicable emission limitation. In lieu of establishing the minimum foam blanket thickness during the performance test, the owner or operator may accept 2.54 centimeters (1 inch) as the minimum foam blanket thickness that corresponds to compliance with the applicable emission limitation. All foam blanket measurements must be taken in close proximity to the workpiece or cathode area in the plating tank(s).

(ii) On and after the date on which the initial performance test is required to be completed under §63.7, except for hard chromium electroplaters and chromium anodizing operations in California which have until January 25, 1998, the owner or operator of an affected source shall monitor the foam blanket thickness of the electroplating

or anodizing bath. Operation of the affected source at a foam blanket thickness less than the value established during the performance test, or less than 2.54 cm (1 inch) if the owner or operator is using this value in accordance with paragraph (c)(6)(i) of this section, shall constitute noncompliance with the standards. The foam blanket thickness shall be measured according to the following schedule:

(A) The foam blanket thickness shall be measured once every 1 hour of tank operation.

(B) The time between monitoring can be increased if there have been no exceedances. The foam blanket thickness shall be measured once every hour of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances for 40 hours of tank operation, foam blanket thickness measurement may be conducted once every 4 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, foam blanket thickness measurement may be conducted once every 8 hours of tank operation on an ongoing basis, until an exceedance occurs. The minimum frequency of monitoring allowed by this subpart is once per 8 hours of tank operation.

(C) Once an exceedance occurs as indicated through foam blanket thickness monitoring, the original monitoring schedule of once every hour must be resumed. A subsequent decrease in frequency shall follow the schedule laid out in paragraph (c)(6)(ii)(B) of this section. For example, if an owner or operator had been monitoring an affected source once every 8 hours and an exceedance occurs, subsequent monitoring would take place once every hour of tank operation. Once an exceedance does not occur for 40 hours of tank operation, monitoring can occur once every 4 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation on this schedule, monitoring can occur once every 8 hours of tank operation.

(iii) Once a bath solution is drained from the affected tank and a new solution added, the original monitoring schedule of once every hour must be resumed, with a decrease in monitoring frequency allowed following the proce-

dures of paragraphs (c)(6)(ii) (B) and (C) of this section.

(7) *Fume suppressant/add-on control device.* (i) If the owner or operator of an affected source uses both a fume suppressant and add-on control device and both are needed to comply with the applicable emission limit, monitoring requirements as identified in paragraphs (c) (1) through (6) of this section, and the work practice standards of Table 1 of § 63.342, apply for each of the control techniques used.

(ii) If the owner or operator of an affected source uses both a fume suppressant and add-on control device, but only one of these techniques is needed to comply with the applicable emission limit, monitoring requirements as identified in paragraphs (c) (1) through (6) of this section, and work practice standards of Table 1 of § 63.342, apply only for the control technique used to achieve compliance.

(8) *Use of an alternative monitoring method.* (i) Requests and approvals of alternative monitoring methods shall be considered in accordance with § 63.8(f)(1), (f)(3), (f)(4), and (f)(5).

(ii) After receipt and consideration of an application for an alternative monitoring method, the Administrator may approve alternatives to any monitoring methods or procedures of this subpart including, but not limited to, the following:

(A) Alternative monitoring requirements when installation or use of monitoring devices specified in this subpart would not provide accurate measurements due to interferences caused by substances within the effluent gases; or

(B) Alternative locations for installing monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(d) An owner or operator who uses an air pollution control device not listed in this section shall submit a description of the device, test results collected in accordance with § 63.344(c) verifying the performance of the device for reducing chromium emissions to the atmosphere to the level required by this subpart, a copy of the operation and maintenance plan referenced in

§ 63.342(f) including proposed work practice standards, and appropriate operating parameters that will be monitored to establish continuous compliance with the standards. The monitoring plan submitted identifying the continuous compliance monitoring is subject to the Administrator's approval.

[60 FR 4963, Jan. 25, 1995; 60 FR 33122, June 27, 1995, as amended at 62 FR 42920, Aug. 11, 1997]

§ 63.344 Performance test requirements and test methods.

(a) *Performance test requirements.* Performance tests shall be conducted using the test methods and procedures in this section and § 63.7. Performance test results shall be documented in complete test reports that contain the information required by paragraphs (a)(1) through (a)(9) of this section. The test plan to be followed shall be made available to the Administrator prior to the testing, if requested.

- (1) A brief process description;
- (2) Sampling location description(s);
- (3) A description of sampling and analytical procedures and any modifications to standard procedures;
- (4) Test results;
- (5) Quality assurance procedures and results;
- (6) Records of operating conditions during the test, preparation of standards, and calibration procedures;
- (7) Raw data sheets for field sampling and field and laboratory analyses;
- (8) Documentation of calculations; and
- (9) Any other information required by the test method.

(b)(1) If the owner or operator of an affected source conducts performance testing at startup to obtain an operating permit in the State in which the affected source is located, the results of such testing may be used to demonstrate compliance with this subpart if:

- (i) The test methods and procedures identified in paragraph (c) of this section were used during the performance test;
- (ii) The performance test was conducted under representative operating conditions for the source;
- (iii) The performance test report contains the elements required by paragraph (a) of this section; and

(iv) The owner or operator of the affected source for which the performance test was conducted has sufficient data to establish the operating parameter value(s) that correspond to compliance with the standards, as required for continuous compliance monitoring under § 63.343(c).

(2) The results of tests conducted prior to December 1991 in which Method 306A, appendix A of this part, was used to demonstrate the performance of a control technique are not acceptable.

(c) *Test methods.* Each owner or operator subject to the provisions of this subpart and required by § 63.343(b) to conduct an initial performance test shall use the test methods identified in this section to demonstrate compliance with the standards in § 63.342.

(1) Method 306 or Method 306A, "Determination of Chromium Emissions From Decorative and Hard Chromium Electroplating and Anodizing Operations," appendix A of this part shall be used to determine the chromium concentration from hard or decorative chromium electroplating tanks or chromium anodizing tanks. The sampling time and sample volume for each run of Methods 306 and 306A, appendix A of this part shall be at least 120 minutes and 1.70 dscm (60 dscf), respectively. Methods 306 and 306A, appendix A of this part allow the measurement of either total chromium or hexavalent chromium emissions. For the purposes of this standard, sources using chromic acid baths can demonstrate compliance with the emission limits of § 63.342 by measuring either total chromium or hexavalent chromium. Hence, the hexavalent chromium concentration measured by these methods is equal to the total chromium concentration for the affected operations.

(2) The California Air Resources Board (CARB) Method 425 (which is available by contacting the California Air Resources Board, 1102 Q Street, Sacramento, California 95814) may be used to determine the chromium concentration from hard and decorative chromium electroplating tanks and chromium anodizing tanks if the following conditions are met:

- (i) If a colorimetric analysis method is used, the sampling time and volume

shall be sufficient to result in 33 to 66 micrograms of catch in the sampling train.

(ii) If Atomic Absorption Graphite Furnace (AAGF) or Ion Chromatography with a Post-column Reactor (ICPCR) analyses were used, the sampling time and volume should be sufficient to result in a sample catch that is 5 to 10 times the minimum detection limit of the analytical method (i.e., 1.0 microgram per liter of sample for AAGF and 0.5 microgram per liter of sample for ICPCR).

(iii) In the case of either paragraph (c)(2) (i) or (ii) of this section, a minimum of 3 separate runs must be conducted. The other requirements of § 63.7 that apply to affected sources, as indicated in Table 1 of this subpart, must also be met.

(3) Method 306B, "Surface Tension Measurement and Recordkeeping for Tanks Used at Decorative Chromium Electroplating and Anodizing Facilities," appendix A of this part shall be used to measure the surface tension of electroplating and anodizing baths.

(4) Alternate test methods may also be used if the method has been validated using Method 301, appendix A of this part and if approved by the Administrator. Procedures for requesting and obtaining approval are contained in § 63.7(f).

(d) *Establishing site-specific operating parameter values.* (1) Each owner or operator required to establish site-specific operating parameters shall follow the procedures in this section.

(2) All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the affected source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include execution of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(i) Specifications for differential pressure measurement devices used to measure velocity pressure shall be in accordance with section 2.2 of Method 2 (40 CFR part 60, appendix A).

(ii) Specification for differential pressure measurement devices used to

measure pressure drop across a control system shall be in accordance with manufacturer's accuracy specifications.

(3) The surface tension of electroplating and anodizing baths shall be measured using Method 306B, "Surface Tension Measurement and Recordkeeping for Tanks Used at Decorative Chromium Electroplating and Anodizing Facilities," appendix A of this part. This method should also be followed when wetting agent type or combination wetting agent/foam blanket type fume suppressants are used to control chromium emissions from a hard chromium electroplating tank and surface tension measurement is conducted to demonstrate continuous compliance.

(4) The owner or operator of a source required to measure the velocity pressure at the inlet to an add-on air pollution control device in accordance with § 63.343(c)(2), shall establish the site-specific velocity pressure as follows:

(i) Locate a velocity traverse port in a section of straight duct that connects the hooding on the plating tank or tanks with the control device. The port shall be located as close to the control system as possible, and shall be placed a minimum of 2 duct diameters downstream and 0.5 diameter upstream of any flow disturbance such as a bend, expansion, or contraction (see Method 1, 40 CFR part 60, appendix A). If 2.5 diameters of straight duct work does not exist, locate the port 0.8 of the duct diameter downstream and 0.2 of the duct diameter upstream from any flow disturbance.

(ii) A 12-point velocity traverse of the duct to the control device shall be conducted along a single axis according to Method 2 (40 CFR part 60, appendix A) using an S-type pitot tube; measurement of the barometric pressure and duct temperature at each traverse point is not required, but is suggested. Mark the S-type pitot tube as specified in Method 1 (40 CFR part 60, appendix A) with 12 points. Measure the velocity pressure (Δp) values for the velocity points and record. Determine the square root of the individual velocity point Δp values and average. The point with the square root value that comes closest to the average square root value is the point of average velocity.

The Δp value measured for this point during the performance test will be used as the reference for future monitoring.

(5) The owner or operator of a source required to measure the pressure drop across the add-on air pollution control device in accordance with § 63.343(c) (1) through (4) may establish the pressure drop in accordance with the following guidelines:

(i) Pressure taps shall be installed at any of the following locations:

(A) At the inlet and outlet of the control system. The inlet tap should be installed in the ductwork just prior to the control device and the corresponding outlet pressure tap should be installed on the outlet side of the control device prior to the blower or on the downstream side of the blower;

(B) On each side of the packed bed within the control system or on each side of each mesh pad within the control system; or

(C) On the front side of the first mesh pad and back side of the last mesh pad within the control system.

(ii) Pressure taps shall be sited at locations that are:

(A) Free from pluggage as possible and away from any flow disturbances such as cyclonic demisters.

(B) Situated such that no air infiltration at measurement site will occur that could bias the measurement.

(iii) Pressure taps shall be constructed of either polyethylene, polybutylene, or other nonreactive materials.

(iv) Nonreactive plastic tubing shall be used to connect the pressure taps to the device used to measure pressure drop.

(v) Any of the following pressure gauges can be used to monitor pressure drop: a magnehelic gauge, an inclined manometer, or a “U” tube manometer.

(vi) Prior to connecting any pressure lines to the pressure gauge(s), each gauge should be zeroed. No calibration of the pressure gauges is required.

(e) *Special compliance provisions for multiple sources controlled by a common add-on air pollution control device.* (1) This section identifies procedures for measuring the outlet chromium concentration from an add-on air pollution control device that is used to control

multiple sources that may or may not include sources not affected by this subpart.

(2) When multiple affected sources performing the same type of operation (e.g., all are performing hard chromium electroplating), and subject to the same emission limitation, are controlled with an add-on air pollution control device that is not controlling emissions from any other type of affected operation or from any non-affected sources, the applicable emission limitation identified in § 63.342 must be met at the outlet of the add-on air pollution control device.

(3) When multiple affected sources performing the same type of operation and subject to the same emission limitation are controlled with a common add-on air pollution control device that is also controlling emissions from sources not affected by these standards, the following procedures should be followed to determine compliance with the applicable emission limitation in § 63.342:

(i) Calculate the cross-sectional area of each inlet duct (i.e., uptakes from each hood) including those not affected by the standard.

(ii) Determine the total sample time per test run by dividing the total inlet area from all tanks connected to the control system by the total inlet area for all ducts associated with affected sources, and then multiply this number by 2 hours. The calculated time is the minimum sample time required per test run.

(iii) Perform Method 306 testing and calculate an outlet mass emission rate.

(iv) Determine the total ventilation rate from the affected sources by using equation 1:

$$VR_{\text{tot}} \times \frac{IDA_i}{\sum IA_{\text{total}}} = VR_{\text{inlet}} \quad (1)$$

where VR_{tot} is the average total ventilation rate in dscm/min for the three test runs as determined at the outlet by means of the Method 306 testing; IDA_i is the total inlet area for all ducts associated with affected sources; IA_{total} is the sum of all inlet duct areas from both affected and nonaffected sources; and VR_{inlet} is the total ventilation rate

from all inlet ducts associated with affected sources.

(v) Establish the allowable mass emission rate of the system (AMR_{sys}) in

milligrams of total chromium per hour (mg/hr) using equation 2:

$$\sum VR_{inlet} \times EL \times 60 \text{ minutes/hours} = AMR_{sys} \quad (2)$$

where $\sum VR_{inlet}$ is the total ventilation rate in dscm/min from the affected sources, and EL is the applicable emission limitation from §63.342 in mg/dscm. The allowable mass emission rate (AMR_{sys}) calculated from equation 2 should be equal to or more than the outlet three-run average mass emission rate determined from Method 306 testing in order for the source to be in compliance with the standard.

(4) When multiple affected sources performing different types of operations (e.g., hard chromium electroplating, decorative chromium electroplating, or chromium anodizing) are controlled by a common add-on air pollution control device that may or may not also be controlling emissions from sources not affected by these standards, or if the affected sources controlled by the common add-on air pollution control device perform the same operation but are subject to different emission limitations (e.g., because one is a new hard chromium plating tank and one is an existing small, hard chromium plating tank), the following procedures should be followed to determine compliance with the applicable emission limitation in §63.342:

(i) Follow the steps outlined in paragraphs (e)(3)(i) through (e)(3)(iii) of this section.

(ii) Determine the total ventilation rate for each type of affected source using equation 3:

$$VR_{tot} \times \frac{IDA_{i,a}}{\sum IDA_{total}} = VR_{inlet,a} \quad (3)$$

where VR_{tot} is the average total ventilation rate in dscm/min for the three test runs as determined at the outlet by means of the Method 306 testing; $IDA_{i,a}$ is the total inlet duct area for all ducts conveying chromic acid from each type of affected source performing

the same operation, or each type of affected source subject to the same emission limitation; IDA_{total} is the sum of all duct areas from both affected and non-affected sources; and $VR_{inlet,a}$ is the total ventilation rate from all inlet ducts conveying chromic acid from each type of affected source performing the same operation, or each type of affected source subject to the same emission limitation.

(iii) Establish the allowable mass emission rate in mg/hr for each type of affected source that is controlled by the add-on air pollution control device using equation 4, 5, 6, or 7 as appropriate:

$$VR_{hc1} \times EL_{hc1} \times 60 \text{ minutes/hour} = AMR_{hc1} \quad (4)$$

$$VR_{hc2} \times EL_{hc2} \times 60 \text{ minutes/hour} = AMR_{hc2} \quad (5)$$

$$VR_{dc} \times EL_{dc} \times 60 \text{ minutes/hour} = AMR_{dc} \quad (6)$$

$$VR_{ca} \times EL_{ca} \times 60 \text{ minutes/hour} = AMR_{ca} \quad (7)$$

where “hc” applies to the total of ventilation rates for all hard chromium electroplating tanks subject to the same emission limitation, “dc” applies to the total of ventilation rates for the decorative chromium electroplating tanks, “ca” applies to the total of ventilation rates for the chromium anodizing tanks, and EL is the applicable emission limitation from §63.342 in mg/dscm. There are two equations for hard chromium electroplating tanks because different emission limitations may apply (e.g., a new tank versus an existing, small tank).

(iv) Establish the allowable mass emission rate (AMR) in mg/hr for the system using equation 8, including each type of affected source as appropriate:

$$AMR_{hc1} + AMR_{hc2} + AMR_{dc} + AMR_{ca} = AMR_{sys} \quad (8)$$

The allowable mass emission rate calculated from equation 8 should be equal to or more than the outlet three-run average mass emission rate determined from Method 306 testing in order for the source to be in compliance with the standards.

(5) Each owner or operator that uses the special compliance provisions of this paragraph to demonstrate compliance with the emission limitations of § 63.342 shall submit the measurements and calculations to support these compliance methods with the notification of compliance status required by § 63.347(e).

(6) Each owner or operator that uses the special compliance provisions of this section to demonstrate compliance with the emission limitations of § 63.342 shall repeat these procedures if a tank is added or removed from the control system regardless of whether that tank is a nonaffected source. If the new nonaffected tank replaces an existing nonaffected tank of the same size and is connected to the control system through the same size inlet duct then this procedure does not have to be repeated.

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

§ 63.345 Provisions for new and reconstructed sources.

(a) This section identifies the preconstruction review requirements for new and reconstructed affected sources that are subject to, or become subject to, this subpart.

(b) *New or reconstructed affected sources.* The owner or operator of a new or reconstructed affected source is subject to § 63.5(a), (b)(1), (b)(5), (b)(6), and (f)(1), as well as the provisions of this paragraph.

(1) After January 25, 1995, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, no person may construct a new affected source or reconstruct an affected source subject to this subpart, or reconstruct a source such that it becomes an affected source subject to this subpart, without submitting a notification of construction or reconstruction to the Administrator. The notification shall contain the informa-

tion identified in paragraphs (b) (2) and (3) of this section, as appropriate.

(2) The notification of construction or reconstruction required under paragraph (b)(1) of this section shall include:

(i) The owner or operator's name, title, and address;

(ii) The address (i.e., physical location) or proposed address of the affected source if different from the owner's or operator's;

(iii) A notification of intention to construct a new affected source or make any physical or operational changes to an affected source that may meet or has been determined to meet the criteria for a reconstruction as defined in § 63.2;

(iv) An identification of subpart N of this part as the basis for the notification;

(v) The expected commencement and completion dates of the construction or reconstruction;

(vi) The anticipated date of (initial) startup of the affected source;

(vii) The type of process operation to be performed (hard or decorative chromium electroplating, or chromium anodizing);

(viii) A description of the air pollution control technique to be used to control emissions from the affected source, such as preliminary design drawings and design capacity if an add-on air pollution control device is used; and

(ix) An estimate of emissions from the source based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emission limits of this subpart. Calculations of emission estimates should be in sufficient detail to permit assessment of the validity of the calculations.

(3) If a reconstruction is to occur, the notification required under paragraph (b)(1) of this section shall include the following in addition to the information required in paragraph (b)(2) of this section:

(i) A brief description of the affected source and the components to be replaced;

(ii) A brief description of the present and proposed emission control technique, including the information required by paragraphs (b)(2) (viii) and (ix) of this section;

(iii) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new source;

(iv) The estimated life of the affected source after the replacements; and

(v) A discussion of any economic or technical limitations the source may have in complying with relevant standards or other requirements after the proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the Administrator's satisfaction that the technical or economic limitations affect the source's ability to comply with the relevant standard and how they do so.

(vi) If in the notification of reconstruction, the owner or operator designates the affected source as a reconstructed source and declares that there are no economic or technical limitations to prevent the source from complying with all relevant standards or requirements, the owner or operator need not submit the information required in paragraphs (b)(3) (iii) through (v) of this section.

(4) The owner or operator of a new or reconstructed affected source that submits a notification in accordance with paragraphs (b) (1) through (3) of this section is not subject to approval by the Administrator. Construction or reconstruction is subject only to notification and can begin upon submission of a complete notification.

(5) *Submittal timeframes.* After January 25, 1995, whether or not an approved permit program is effective in the State in which an affected source is (or would be) located, an owner or operator of a new or reconstructed affected source shall submit the notification of construction or reconstruction required by paragraph (b)(1) of this section according to the following schedule:

(i) If construction or reconstruction commences after January 25, 1995, the notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence.

(ii) If the construction or reconstruction had commenced and initial start-up had not occurred before January 25, 1995, the notification shall be submitted as soon as practicable before start-up but no later than 60 days after January 25, 1995.

§ 63.346 Recordkeeping requirements.

(a) The owner or operator of each affected source subject to these standards shall fulfill all recordkeeping requirements outlined in this section and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A of this part as identified in Table 1 of this subpart.

(b) The owner or operator of an affected source subject to the provisions of this subpart shall maintain the following records for such source:

(1) Inspection records for the add-on air pollution control device, if such a device is used, and monitoring equipment, to document that the inspection and maintenance required by the work practice standards of § 63.342(f) and Table 1 of § 63.342 have taken place. The record can take the form of a checklist and should identify the device inspected, the date of inspection, a brief description of the working condition of the device during the inspection, and any actions taken to correct deficiencies found during the inspection.

(2) Records of all maintenance performed on the affected source, the add-on air pollution control device, and monitoring equipment;

(3) Records of the occurrence, duration, and cause (if known) of each malfunction of process, add-on air pollution control, and monitoring equipment;

(4) Records of actions taken during periods of malfunction when such actions are inconsistent with the operation and maintenance plan;

(5) Other records, which may take the form of checklists, necessary to demonstrate consistency with the provisions of the operation and maintenance plan required by § 63.342(f)(3);

(6) Test reports documenting results of all performance tests;

(7) All measurements as may be necessary to determine the conditions of

performance tests, including measurements necessary to determine compliance with the special compliance procedures of § 63.344(e);

(8) Records of monitoring data required by § 63.343(c) that are used to demonstrate compliance with the standard including the date and time the data are collected;

(9) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, add-on air pollution control, or monitoring equipment;

(10) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during periods other than malfunction of the process, add-on air pollution control, or monitoring equipment;

(11) The total process operating time of the affected source during the reporting period;

(12) Records of the actual cumulative rectifier capacity of hard chromium electroplating tanks at a facility expended during each month of the reporting period, and the total capacity expended to date for a reporting period, if the owner or operator is using the actual cumulative rectifier capacity to determine facility size in accordance with § 63.342(c)(2);

(13) For sources using fume suppressants to comply with the standards, records of the date and time that fume suppressants are added to the electroplating or anodizing bath;

(14) For sources complying with § 63.342(e), records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components;

(15) Any information demonstrating whether a source is meeting the requirements for a waiver of record-keeping or reporting requirements, if the source has been granted a waiver under § 63.10(f); and

(16) All documentation supporting the notifications and reports required by § 63.9, § 63.10, and § 63.347.

(c) All records shall be maintained for a period of 5 years in accordance with § 63.10(b)(1).

§ 63.347 Reporting requirements.

(a) The owner or operator of each affected source subject to these standards shall fulfill all reporting requirements outlined in this section and in the General Provisions to 40 CFR part 63, according to the applicability of subpart A as identified in Table 1 of this subpart. These reports shall be made to the Administrator at the appropriate address as identified in § 63.13 or to the delegated State authority.

(1) Reports required by subpart A of this part and this section may be sent by U.S. mail, fax, or by another courier.

(i) Submittals sent by U.S. mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of an affected source, reports may be submitted on electronic media.

(b) The reporting requirements of this section apply to the owner or operator of an affected source when such source becomes subject to the provisions of this subpart.

(c) *Initial notifications.* (1) The owner or operator of an affected source that has an initial startup before January 25, 1995, shall notify the Administrator in writing that the source is subject to this subpart. The notification shall be submitted no later than 180 calendar days after January 25, 1995, and shall contain the following information:

(i) The name, title, and address of the owner or operator;

(ii) The address (i.e., physical location) of each affected source;

(iii) A statement that subpart N of this part is the basis for this notification;

(iv) Identification of the applicable emission limitation and compliance date for each affected source;

(v) A brief description of each affected source, including the type of process operation performed;

(vi) For sources performing hard chromium electroplating, the maximum potential cumulative potential rectifier capacity;

(vii) For sources performing hard chromium electroplating, a statement of whether the affected source(s) is located at a small or a large, hard chromium electroplating facility and whether this will be demonstrated through actual or maximum potential cumulative rectifier capacity;

(viii) For sources performing hard chromium electroplating tanks, a statement of whether the owner or operator of an affected source(s) will limit the maximum potential cumulative rectifier capacity in accordance with § 63.342(c)(2) such that the hard chromium electroplating facility is considered small; and

(ix) A statement of whether the affected source is located at a major source or an area source as defined in § 63.2.

(2) The owner or operator of a new or reconstructed affected source that has an initial startup after January 25, 1995 shall submit an initial notification (in addition to the notification of construction or reconstruction required by § 63.345(b) as follows:

(i) A notification of the date when construction or reconstruction was commenced, shall be submitted simultaneously with the notification of construction or reconstruction, if construction or reconstruction was commenced before January 25, 1995;

(ii) A notification of the date when construction or reconstruction was commenced, shall be submitted no later than 30 calendar days after such date, if construction or reconstruction was commenced after January 25, 1995; and

(iii) A notification of the actual date of startup of the source shall be submitted within 30 calendar days after such date.

(d) *Notification of performance test.* (1) The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the test is scheduled to begin to allow the Administrator to have an observer present during the test. Observation of the per-

formance test by the Administrator is optional.

(2) In the event the owner or operator is unable to conduct the performance test as scheduled, the provisions of § 63.7(b)(2) apply.

(e) *Notification of compliance status.* (1) A notification of compliance status is required each time that an affected source becomes subject to the requirements of this subpart.

(2) If the State in which the source is located has not been delegated the authority to implement the rule, each time a notification of compliance status is required under this part, the owner or operator of an affected source shall submit to the Administrator a notification of compliance status, signed by the responsible official (as defined in § 63.2) who shall certify its accuracy, attesting to whether the affected source has complied with this subpart. If the State has been delegated the authority, the notification of compliance status shall be submitted to the appropriate authority. The notification shall list for each affected source:

(i) The applicable emission limitation and the methods that were used to determine compliance with this limitation;

(ii) If a performance test is required by this subpart, the test report documenting the results of the performance test, which contains the elements required by § 63.344(a), including measurements and calculations to support the special compliance provisions of § 63.344(e) if these are being followed;

(iii) The type and quantity of hazardous air pollutants emitted by the source reported in mg/dscm or mg/hr if the source is using the special provisions of § 63.344(e) to comply with the standards. (If the owner or operator is subject to the construction and reconstruction provisions of § 63.345 and had previously submitted emission estimates, the owner or operator shall state that this report corrects or verifies the previous estimate.) For sources not required to conduct a performance test in accordance with § 63.343(b), the surface tension measurement may fulfill this requirement;

(iv) For each monitored parameter for which a compliant value is to be established under § 63.343(c), the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit;

(v) The methods that will be used to determine continuous compliance, including a description of monitoring and reporting requirements, if methods differ from those identified in this subpart;

(vi) A description of the air pollution control technique for each emission point;

(vii) A statement that the owner or operator has completed and has on file the operation and maintenance plan as required by the work practice standards in § 63.342(f);

(viii) If the owner or operator is determining facility size based on actual cumulative rectifier capacity in accordance with § 63.342(c)(2), records to support that the facility is small. For existing sources, records from any 12-month period preceding the compliance date shall be used or a description of how operations will change to meet a small designation shall be provided. For new sources, records of projected rectifier capacity for the first 12-month period of tank operation shall be used;

(ix) A statement by the owner or operator of the affected source as to whether the source has complied with the provisions of this subpart.

(3) For sources required to conduct a performance test by § 63.343(b), the notification of compliance status shall be submitted to the Administrator no later than 90 calendar days following completion of the compliance demonstration required by § 63.7 and § 63.343(b).

(4) For sources that are not required to complete a performance test in accordance with § 63.343(b), the notification of compliance status shall be submitted to the Administrator no later than 30 days after the compliance date specified in § 63.343(a), except the date on which sources in California shall monitor the surface tension of the anodizing bath is extended to January 25, 1998.

(f) *Reports of performance test results.*

(1) If the State in which the source is located has not been delegated the au-

thority to implement the rule, the owner or operator of an affected source shall report to the Administrator the results of any performance test conducted as required by § 63.7 or § 63.343(b). If the State has been delegated the authority, the owner or operator of an affected source should report performance test results to the appropriate authority.

(2) Reports of performance test results shall be submitted no later than 90 days following the completion of the performance test, and shall be submitted as part of the notification of compliance status required by paragraph (e) of this section.

(g) *Ongoing compliance status reports for major sources.* (1) The owner or operator of an affected source that is located at a major source site shall submit a summary report to the Administrator to document the ongoing compliance status of the affected source. The report shall contain the information identified in paragraph (g)(3) of this section, and shall be submitted semiannually except when:

(i) The Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source; or

(ii) The monitoring data collected by the owner or operator of the affected source in accordance with § 63.343(c) show that the emission limit has been exceeded, in which case quarterly reports shall be submitted. Once an owner or operator of an affected source reports an exceedance, ongoing compliance status reports shall be submitted quarterly until a request to reduce reporting frequency under paragraph (g)(2) of this section is approved.

(2) *Request to reduce frequency of ongoing compliance status reports.* (i) An owner or operator who is required to submit ongoing compliance status reports on a quarterly (or more frequent basis) may reduce the frequency of reporting to semiannual if all of the following conditions are met:

(A) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods), the ongoing compliance status reports demonstrate that the affected source is in compliance with the relevant emission limit;

(B) The owner or operator continues to comply with all applicable record-keeping and monitoring requirements of subpart A of this part and this subpart; and

(C) The Administrator does not object to a reduced reporting frequency for the affected source, as provided in paragraphs (g)(2) (ii) and (iii) of this section.

(ii) The frequency of submitting ongoing compliance status reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change, and the Administrator does not object to the intended change. In deciding whether to approve a reduced reporting frequency, the Administrator may review information concerning the source's entire previous performance history during the 5-year recordkeeping period prior to the intended change, or the recordkeeping period since the source's compliance date, whichever is shorter. Records subject to review may include performance test results, monitoring data, and evaluations of an owner or operator's conformance with emission limitations and work practice standards. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce reporting frequency, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iii) As soon as the monitoring data required by § 63.343(c) show that the source is not in compliance with the relevant emission limit, the frequency of reporting shall revert to quarterly, and the owner shall state this exceedance in the ongoing compliance status report for the next reporting period. After demonstrating ongoing compliance with the relevant emission limit for another full year, the owner or operator may again request approval

from the Administrator to reduce the reporting frequency as allowed by paragraph (g)(2) of this section.

(3) *Contents of ongoing compliance status reports.* The owner or operator of an affected source for which compliance monitoring is required in accordance with § 63.343(c) shall prepare a summary report to document the ongoing compliance status of the source. The report must contain the following information:

(i) The company name and address of the affected source;

(ii) An identification of the operating parameter that is monitored for compliance determination, as required by § 63.343(c);

(iii) The relevant emission limitation for the affected source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of compliance status required by paragraph (e) of this section;

(iv) The beginning and ending dates of the reporting period;

(v) A description of the type of process performed in the affected source;

(vi) The total operating time of the affected source during the reporting period;

(vii) If the affected source is a hard chromium electroplating tank and the owner or operator is limiting the maximum cumulative rectifier capacity in accordance with § 63.342(c)(2), the actual cumulative rectifier capacity expended during the reporting period, on a month-by-month basis;

(viii) A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to process upsets, control equipment malfunctions, other known causes, and unknown causes;

(ix) A certification by a responsible official, as defined in § 63.2, that the work practice standards in § 63.342(f) were followed in accordance with the

operation and maintenance plan for the source;

(x) If the operation and maintenance plan required by § 63.342(f)(3) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring exceedances are believed to have occurred, and a copy of the report(s) required by § 63.342(f)(3)(iv) documenting that the operation and maintenance plan was not followed;

(xi) A description of any changes in monitoring, processes, or controls since the last reporting period;

(xii) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

(xiii) The date of the report.

(4) When more than one monitoring device is used to comply with the continuous compliance monitoring required by § 63.343(c), the owner or operator shall report the results as required for each monitoring device. However, when one monitoring device is used as a backup for the primary monitoring device, the owner or operator shall only report the results from the monitoring device used to meet the monitoring requirements of this subpart. If both devices are used to meet these requirements, then the owner or operator shall report the results from each monitoring device for the relevant compliance period.

(h) *Ongoing compliance status reports for area sources.* The requirements of this paragraph do not alleviate affected area sources from complying with the requirements of State or Federal operating permit programs under 40 CFR part 71.

(1) The owner or operator of an affected source that is located at an area source site shall prepare a summary report to document the ongoing compliance status of the affected source. The report shall contain the information identified in paragraph (g)(3) of this section, shall be completed annually and retained on site, and made available to the Administrator upon request. The report shall be completed annually except as provided in paragraph (h)(2) of this section.

(2) *Reports of exceedances.* (i) If both of the following conditions are met, semi-

annual reports shall be prepared and submitted to the Administrator:

(A) The total duration of excess emissions (as indicated by the monitoring data collected by the owner or operator of the affected source in accordance with § 63.343(c)) is 1 percent or greater of the total operating time for the reporting period; and

(B) The total duration of malfunctions of the add-on air pollution control device and monitoring equipment is 5 percent or greater of the total operating time.

(ii) Once an owner or operator of an affected source reports an exceedance as defined in paragraph (h)(2)(i) of this section, ongoing compliance status reports shall be submitted semiannually until a request to reduce reporting frequency under paragraph (h)(3) of this section is approved.

(iii) The Administrator may determine on a case-by-case basis that the summary report shall be completed more frequently and submitted, or that the annual report shall be submitted instead of being retained on site, if these measures are necessary to accurately assess the compliance status of the source.

(3) *Request to reduce frequency of ongoing compliance status reports.* (i) An owner or operator who is required to submit ongoing compliance status reports on a semiannual (or more frequent) basis, or is required to submit its annual report instead of retaining it on site, may reduce the frequency of reporting to annual and/or be allowed to maintain the annual report onsite if all of the following conditions are met:

(A) For 1 full year (e.g., 2 semiannual or 4 quarterly reporting periods), the ongoing compliance status reports demonstrate that the affected source is in compliance with the relevant emission limit;

(B) The owner or operator continues to comply with all applicable record-keeping and monitoring requirements of subpart A of this part and this subpart; and

(C) The Administrator does not object to a reduced reporting frequency for the affected source, as provided in paragraphs (h)(3) (ii) and (iii) of this section.

(ii) The frequency of submitting ongoing compliance status reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change, and the Administrator does not object to the intended change. In deciding whether to approve a reduced reporting frequency, the Administrator may review information concerning the source's previous performance history during the 5-year recordkeeping period prior to the intended change, or the recordkeeping period since the source's compliance date, whichever is shorter. Records subject to review may include performance test results, monitoring data, and evaluations of an owner or operator's conformance with emission limitations and work practice standards. Such information may be used by the Administrator to make a judgement about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce reporting frequency, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(iii) As soon as the monitoring data required by §63.343(c) show that the source is not in compliance with the relevant emission limit, the frequency of reporting shall revert to semiannual, and the owner shall state this exceedance in the ongoing compliance status report for the next reporting period. After demonstrating ongoing compliance with the relevant emission limit for another full year, the owner or operator may again request approval from the Administrator to reduce the reporting frequency as allowed by paragraph (h)(3) of this section.

(i) *Reports associated with trivalent chromium baths.* The requirements of this paragraph do not alleviate affected sources from complying with the requirements of State or Federal operating permit programs under title V. Owners or operators complying with the provisions of §63.342(e) are not subject to paragraphs (a) through (h) of this section, but must instead submit the following reports:

(1) Within 180 days after January 25, 1995, submit an initial notification that includes:

(i) The same information as is required by paragraphs (c)(1) (i) through (v) of this section; and

(ii) A statement that a trivalent chromium process that incorporates a wetting agent will be used to comply with §63.342(e); and

(iii) The list of bath components that comprise the trivalent chromium bath, with the wetting agent clearly identified; and

(2) Within 30 days of the compliance date specified in §63.343(a), a notification of compliance status that contains an update of the information submitted in accordance with paragraph (i)(1) of this section or a statement that the information is still accurate; and

(3) Within 30 days of a change to the trivalent chromium electroplating process, a report that includes:

(i) A description of the manner in which the process has been changed and the emission limitation, if any, now applicable to the affected source;

(ii) If a different emission limitation applies, the applicable information required by paragraph (c)(1) of this section; and

(iii) The notification and reporting requirements of paragraphs (d), (e), (f), (g), and (h) of this section, which shall be submitted in accordance with the schedules identified in those paragraphs.

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996; 62 FR 4465, Jan. 30, 1997, 62 FR 42921, Aug. 11, 1997]

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N

General provisions reference	Applies to subpart N	Comment
63.1(a)(1)	Yes	Additional terms defined in §63.341; when overlap between subparts A and N occurs, subpart N takes precedence.

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—
Continued

General provisions reference	Applies to subpart N	Comment
63.1(a)(2)	Yes	Subpart N clarifies the applicability of each paragraph in subpart A to sources subject to subpart N.
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(6)	Yes	
63.1(a)(7)	Yes	
63.1(a)(8)	Yes	§ 63.347(a) of subpart N also allows report submissions via fax and on electronic media.
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12)–(14)	Yes	
63.1(b)(1)	No	§ 63.340 of subpart N specifies applicability.
63.1(b)(2)	Yes	
63.1(b)(3)	No	This provision in subpart A is being deleted. Also, all affected area and major sources are subject to subpart N; there are no exemptions.
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Subpart N clarifies the applicability of each paragraph in subpart A to sources subject to subpart N.
63.1(c)(4)	Yes	
63.1(c)(5)	No	Subpart N specifies permit requirements for area sources.
63.1(e)	Yes	
63.2	Yes	Subpart N clarifies that an area source that becomes a major source is subject to the requirements for major sources.
63.3	Yes	
63.4	Yes	Additional terms defined in § 63.341; when overlap between subparts A and N occurs, subpart N takes precedence.
63.5(a)	Yes	
63.5(b)(1)	Yes	Other units used in subpart N are defined in that subpart.
63.5(b)(3)	Yes	
63.5(b)(4)	No	Except replace the term “source” and “stationary source” in § 63.5(a) (1) and (2) of subpart A with “affected sources.”
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	Applies only to major affected sources.
63.5(d)(1)(i)	No	
63.5(d)(1)(ii)	Yes	Subpart N (§ 63.345) specifies requirements for the notification of construction or reconstruction for affected sources that are not major.
63.5(d)(1)(iii)	Yes	
63.5(d)(2)	Yes	§ 63.345(c)(5) of subpart N specifies when the application or notification shall be submitted.
63.5(d)(3)–(4)	Yes	
63.5(e)	Yes	Applies to major affected sources that are new or reconstructed.
63.5(f)(1)	Yes	
63.5(f)(2)	No	Except information should be submitted with the Notification of Compliance Status required by § 63.347(e) of subpart N.
63.6(a)	Yes	
63.6(b)(1)–(2)	Yes	Applies to major affected sources that are new or reconstructed except: (1) replace “source” in § 63.5(d)(2) of subpart A with “affected source”; and (2) actual control efficiencies are submitted with the Notification of Compliance Status required by § 63.347(e).
63.6(b)(3)–(4)	Yes	
63.6(b)(5)	Yes	Applies to major affected sources that are new or reconstructed.
63.6(b)(7)	No	
63.6(c)(1)–(2)	Yes	Except replace “source” in § 63.5(f)(1) of subpart A with “affected source.”
63.6(c)(5)	No	
63.6(e)	No	New or reconstructed affected sources shall submit the request for approval of construction or reconstruction under § 63.5(f) of subpart A by the deadline specified in § 63.345(c)(5) of subpart N.
63.6(f)(1)	No	
63.6(f)(2)(i)–(ii)	Yes	Except replace “source” in § 63.6(b)(1)–(2) of part A with “affected source.”
63.6(f)(2)(iii)	No	
63.6(b)(3)–(4)	Yes	Except replace “source” in § 63.6(b)(5) of subpart A with “affected source.”
63.6(b)(5)	Yes	
63.6(b)(7)	No	Provisions for new area sources that become major sources are contained in § 63.343(a)(3) of subpart N.
63.6(c)(1)–(2)	Yes	
63.6(c)(5)	No	Except replace “source” in § 63.6(c)(1)–(2) of subpart A with “affected source.”
63.6(e)	No	
63.6(f)(1)	No	Compliance provisions for existing area sources that become major sources are contained in § 63.343(a)(3) of subpart N.
63.6(f)(2)(i)–(ii)	Yes	
63.6(f)(2)(iii)	No	§ 63.342(f) of subpart N contains work practice standards (operation and maintenance requirements) that override these provisions.
63.6(f)(2)(iii)	No	
63.6(f)(2)(iii)	No	§ 63.342(b) of subpart N specifies when the standards apply.
63.6(f)(2)(iii)	No	
63.6(f)(2)(iii)	No	§ 63.344(b) of subpart N specifies instances in which previous performance test results for existing sources are acceptable.
63.6(f)(2)(iii)	No	

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TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—
Continued

General provisions reference	Applies to subpart N	Comment
63.6(f)(2)(iv)	Yes	Subpart N does not contain any opacity or visible emission standards.
63.6(f)(2)(v)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h)	No	
63.6(i)(1)	Yes	Except replace “source” in § 63.6(i)(2)(i) and (ii) of subpart A with “affected source.”
63.6(i)(2)	Yes	
63.6(i)(3)	Yes	§ 63.343(a)(6) of subpart N specifies the procedures for obtaining an extension of compliance and the date by which such requests must be submitted.
63.6(i)(4)(i)	No	
63.6(i)(4)(ii)	Yes	This paragraph only references “paragraph (i)(4) of this section” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(5)	Yes	
63.6(i)(6)(i)	Yes	
63.6(i)(6)(ii)	Yes	This paragraph only references “paragraphs (i)(4) through (i)(6) of this section” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(7)	Yes	
63.6(i)(8)	Yes	
63.6(i)(9)	Yes	This paragraph only references “paragraphs (i)(4) through (i)(6) of this section” and “paragraphs (i)(4) and (i)(5) of this section” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(10)(i)–(iv)	Yes	This paragraph only references “paragraph (i)(4)” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(10)(v)(A)	Yes	
63.6(i)(10)(v)(B)	Yes	This paragraph only references “paragraph (i)(4)(i) or (i)(5) of this section” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.6(i)(11)	Yes	
63.6(i)(12)(i)	Yes	
63.6(i)(12)(ii)–(iii)	Yes	§ 63.344(d) of subpart N requires notification prior to the performance test. § 63.344(a) of subpart N requires submission of a site-specific test plan upon request.
63.6(i)(13)	Yes	
63.6(i)(14)	Yes	
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)(i)–(vi)	Yes	
63.7(a)(2)(ix)	Yes	
63.7(a)(3)	Yes	
63.7(b)(1)	No	
63.7(b)(2)	Yes	§ 63.344(a) of subpart N specifies what the test plan should contain, but does not require test plan approval or performance audit samples.
63.7(c)	No	
63.7(d)	Yes	Except replace “source” in the first sentence of § 63.7(d) of subpart A with “affected source.”
63.7(e)	Yes	Subpart N also contains test methods specific to affected sources covered by that subpart.
63.7(f)	Yes	§ 63.344(c)(2) of subpart N identifies CARB Method 425 as acceptable under certain conditions.
63.7(g)(1)	No	Subpart N identifies the items to be reported in the compliance test [§ 63.344(a)] and the timeframe for submitting the results [§ 63.347(f)].
63.7(g)(3)	Yes	This paragraph only references “§ 63.6(i)” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension.
63.7(h)(1)–(2)	Yes	
63.7(h)(3)(i)	Yes	
63.7(h)(3)(ii)–(iii)	Yes	
63.7(h)(4)–(5)	Yes	

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—
Continued

General provisions reference	Applies to subpart N	Comment
63.8(a)(1)	Yes	Work practice standards are contained in § 63.342(f) of subpart N.
63.8(a)(2)	No	
63.8(a)(4)	No	
63.8(b)(1)	Yes	§ 63.344(d) of subpart N specifies the monitoring location when there are multiple sources.
63.8(b)(2)	No	
63.8(b)(3)	No	§ 63.347(g)(4) of subpart N identifies reporting requirements when multiple monitors are used.
63.8(c)(1)(i)	No	Subpart N requires proper maintenance of monitoring devices expected to be used by sources subject to subpart N.
63.8(c)(1)(ii)	No	§ 63.342(f)(3)(iv) of subpart N specifies reporting when the O&M plan is not followed.
63.8(c)(1)(iii)	No	§ 63.343(f)(2) identifies the criteria for whether O&M procedures are acceptable.
63.8(c)(2)–(3)	No	§ 63.344(d)(2) requires appropriate use of monitoring devices.
63.8(c)(4)–(7)	No	Maintenance of monitoring devices is required by §§ 63.342(f) and 63.344(d)(2) of subpart N.
63.8(d)	No	
63.8(e)	No	There are no performance evaluation procedures for the monitoring devices expected to be used to comply with subpart N.
63.8(f)(1)	Yes	Instances in which the Administrator may approve alternatives to the monitoring methods and procedures of subpart N are contained in § 63.343(c)(8) of subpart N.
63.8(f)(2)	No	
63.8(f)(3)	Yes	Subpart N does not require the use of CEM's. Monitoring data does not need to be reduced for reporting purposes because subpart N requires measurement once/day.
63.8(f)(4)	Yes	
63.8(f)(5)	Yes	
63.8(f)(6)	No	
63.8(g)	No	
63.9(a)	Yes	§ 63.343(a)(3) of subpart N requires area sources to comply with major source provisions if an increase in HAP emissions causes them to become major sources.
63.9(b)(1)(i)–(ii)	No	
63.9(b)(1)(iii)	No	§ 63.347(c)(2) of subpart N specifies initial notification requirements for new or reconstructed affected sources.
63.9(b)(2)	No	§ 63.347(c)(1) of subpart N specifies the information to be contained in the initial notification.
63.9(b)(3)	No	§ 63.347(c)(2) of subpart N specifies notification requirements for new or reconstructed sources that are not major affected sources.
63.9(b)(4)	No	This paragraph only references “§ 63.6(i)(4) through § 63.6(i)(6)” for compliance extension provisions. But, § 63.343(a)(6) of subpart N also contains provisions for requesting a compliance extension. Subpart N provides a different timeframe for submitting the request than § 63.6(i)(4).
63.9(b)(5)	No	
63.9(c)	Yes	
63.9(d)	Yes	This paragraph only references “the notification dates established in paragraph (g) of this section.” But, § 63.347 of subpart N also contains notification dates.
63.9(e)	No	Notification of performance test is required by § 63.347(d) of subpart N.
63.9(f)	No	Subpart N does not require a performance evaluation or relative accuracy test for monitoring devices.
63.9(g)	No	
63.9(h)(1)–(3)	No	§ 63.347(e) of subpart N specifies information to be contained in the notification of compliance status and the timeframe for submitting this information.
63.9(h)(5)	No	Similar language has been incorporated into § 63.347(e)(2)(iii) of subpart N.
63.9(h)(6)	Yes	§ 63.346(b) of subpart N specifies the records that must be maintained.
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	Subpart N applies to major and area sources.
63.10(b)(1)	Yes	
63.10(b)(2)	No	Applicable requirements of § 63.10(c) have been incorporated into § 63.346(b) of subpart N.
63.10(b)(3)	No	
63.10(c)	No	

TABLE 1 TO SUBPART N OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART N—
Continued

General provisions reference	Applies to subpart N	Comment
63.10(d)(1)	Yes	
63.10(d)(2)	No	§ 63.347(f) of subpart N specifies the timeframe for reporting performance test results.
63.10(d)(3)	No	Subpart N does not contain opacity or visible emissions standards.
63.10(d)(4)	Yes	
63.10(d)(5)	No	§ 63.342(f)(3)(iv) and § 63.347(g)(3) of subpart N specify reporting associated with malfunctions.
63.10(e)	No	§ 63.347(g) and (h) of subpart N specify the frequency of periodic reports of monitoring data used to establish compliance. Applicable requirements of § 63.10(e) have been incorporated into § 63.347(g) and (h).
63.10(f)	Yes	
63.11	No	Flares will not be used to comply with the emission limits.
63.12–63.15	Yes	

[60 FR 4963, Jan. 25, 1995, as amended at 61 FR 27787, June 3, 1996]

Subpart O—Ethylene Oxide Emissions Standards for Sterilization Facilities

SOURCE: 59 FR 62589, Dec. 6, 1994, unless otherwise noted.

EFFECTIVE DATE NOTE: At 62 FR 64738, Dec. 9, 1997, Subpart O, consisting of §§ 63.360–63.367, are suspended from Dec. 4, 1997 until Dec. 6, 1998.

§ 63.360 Applicability.

(a) All sterilization sources using 1 ton (see definition) in sterilization or fumigation operations are subject to the emissions standards in § 63.362, except as specified in paragraphs (b) through (e) of this section. Owners or operators of sources using 1 ton (see definition) subject to the provisions of this subpart must comply with the requirements of subpart A, of this part according to the applicability of subpart A of this part to such sources in Table 1 of this section.

TABLE 1 OF SECTION 63.360—GENERAL PROVISIONS APPLICABILITY TO SUBPART O

Reference	Applies to sources using 10 tons in subpart O ^a	Applies to sources using 1 to 10 tons in subpart O ^a	Comment
63.1(a)(1)	Yes		Additional terms defined in § 63.361; when overlap between subparts A and O occurs, subpart O takes precedence.
63.1(a)(2)	Yes		
63.1(a)(3)	Yes		
63.1(a)(4)	Yes		Subpart O clarifies the applicability of each paragraph in subpart A to sources subject to subpart O.
63.1(a)(5)	No		Reserved.
63.1(a)(6)	Yes		
63.1(a)(7)	Yes		
63.1.1(a)(8)	Yes		
63.1(a)(9)	No		Reserved.
63.1(a)(10)	Yes		
63.1(a)(11)	Yes		§ 63.366(a) of subpart O also allows report submissions via fax and on electronic media.
63.1(a)(12)–(14)	Yes		
63.1(b)(1)–(2)	Yes		
63.1(b)(3)	No		§ 63.367 clarifies the applicability of recordkeeping requirements for sources that determine they are not subject to the emissions standards.
63.1(c)(1)	Yes		Subpart O clarifies the applicability of each paragraph in subpart A to sources subject to subpart O in this table.

TABLE 1 OF SECTION 63.360—GENERAL PROVISIONS APPLICABILITY TO SUBPART O—Continued

Reference	Applies to sources using 10 tons in subpart O ^a	Applies to sources using 1 to 10 tons in subpart O ^a	Comment
63.1(c)(2)	Yes		Subpart O also specifies which sources are required to obtain a Title V permit in § 63.360.
63.1(c)(3)	No		Reserved.
63.1(c)(4)	Yes		
63.1(c)(5)	No		§ 63.360 specifies applicability.
63.1(d)	No		Reserved.
63.1(e)	Yes		
63.2	Yes		Additional terms defined in § 63.361; when overlap between subparts A and O occurs, subpart O takes precedence. Other units used in subpart O are defined in the text of subpart O.
63.3	Yes		
63.4(a)(1)-(3)	Yes		
63.4(a)(4)	No		Reserved.
63.4(a)(5)	Yes		
63.4(b)	Yes		
63.4(c)	Yes		
63.5(a)	No		§ 63.366(b)(1) contains applicability requirements for constructed or reconstructed sources.
63.5(b)(1)	Yes	No	
63.5(b)(2)		No	Reserved.
63.5(b)(3)		No	See § 63.366(b)(2).
63.5(b)(4)	Yes	No	
63.5(b)(5)	Yes	No	
63.5(b)(6)	Yes	No	
63.5(c)		No	Reserved.
63.5(d)(1)-(2)		No	See § 63.366(b)(3).
63.5(d)(3)-(4)	Yes	No	
63.5(e)	Yes	No	
63.5(f)(1) and (2)		No	See § 63.366(b)(4).
63.6(a)(1)		Yes	
63.6(a)(2)		No	§ 63.360 specifies applicability.
63.6(b) and (c)		No	§ 63.360(g) specifies compliance dates for sources.
63.6(d)		No	Reserved.
63.6(e)		No	Subpart O does not contain any operation and maintenance plan requirements.
63.6(f)(1)		No	§ 63.362(b) specifies when the standards apply.
63.6(f)(2)(i)		Yes	
63.6(f)(2)(ii)		No	§ 63.363 specifies parameters for determining compliance.
63.6(f)(2)(iii)-(iv)		Yes	
63.6(f)(2)(v)		No	
63.6(f)(3)		Yes	
63.6(g)		Yes	
63.6(h)		No	Subpart O does not contain any opacity or visible emission standards.
63.6(i)(1)-(14)		Yes	
63.6(i)(15)		No	Reserved
63.6(i)(16)		Yes	
63.6(j)		Yes	
63.7(a)(1)		Yes	
63.7(a)(2)		No	§ 63.365(a)(2) specifies performance test dates.
63.7(a)(3)		Yes	
63.7(b)		Yes	
63.7(c)	Yes	No.	
63.7(d)	Yes	No.	
63.7(e)		Yes	§ 63.365 also contains test methods specific to sources subject to the emissions standards.
63.7(f)		Yes	
63.7(g)(1)		Yes	
63.7(g)(2)		No	Reserved
63.7(g)(3)		Yes	
63.7(h)		Yes	
63.8(a)(1)		Yes	

TABLE 1 OF SECTION 63.360—GENERAL PROVISIONS APPLICABILITY TO SUBPART O—Continued

Reference	Applies to sources using 10 tons in subpart O ^a	Applies to sources using 1 to 10 tons in subpart O ^a	Comment
63.8(a)(2)	Yes		Reserved
63.8(a)(3)	No		
63.8(a)(4)	Yes		
63.8(b)(1)	Yes		
63.8(b)(2)	Yes		
63.8(b)(3)	No		
63.8(c)(1) (i) and (ii)	No		A startup, shutdown, and malfunction plan is not required for these standards.
63.8(c)(1)(iii)	Yes		Frequency of monitoring measurements is provided in § 63.364; opacity monitors are not required for these standards.
63.8(c)(2)–(3)	Yes		
63.8(c)(4)–(5)	No		
63.8(c)(6)	No		Performance specifications for gas chromatographs and temperature monitors are contained in § 63.365.
63.8(c)(7)(i)(A)–(B)	No		Performance specifications for gas chromatographs and temperature monitors are contained in § 63.365.
63.8(c)(7)(i)(C)	No		Opacity monitors are not required for these standards.
63.8(c)(7)(ii)	No		Performance specifications for gas chromatographs and temperature monitors are contained in § 63.365.
63.8(c)(8)	No		Opacity monitors are not required for these standards.
63.8(d)	Yes	No.	
63.8(e)(1)	Yes		
63.8(e)(2)	Yes		
63.8(e)(3)	Yes	No.	
63.8(e)(4)	Yes		
63.8(e)(5)(i)	Yes		
63.8(e)(5)(ii)	No		
63.8(f)(1)–(5)	Yes		
63.8(f)(6)	No		
63.8(g)(1)	Yes		§ 63.366(c)(1)(i) contains language for sources that increase usage such that the source becomes subject to the emissions standards. § 63.366(c)(3) contains additional information to be included in the initial report for existing and new sources. § 63.366(c)(1)(ii) and (iii) contains requirements for new or reconstructed sources subject to the emissions standards.
63.8(g)(2)	No		
63.8(g)(3)–(5)	Yes		
63.9(a)	Yes		
63.9(b)(1)–(i)	Yes		
63.9(b)(1)(ii)–(iii)	No		
63.9(b)(2)–(3)	Yes		
63.9(b)(4)–(5)	No		
63.9(c)	Yes		
63.9(d)	No		
63.9(e)	Yes		Opacity monitors are not required for these standards.
63.9(f)	No		
63.9(g)(1)	Yes		Opacity monitors and relative accuracy testing are not required for these standards.
63.9(g)(2)–(3)	No		
63.9(h)(1)–(3)	Yes		Reserved. § 63.366(c)(2) instructs sources to submit actual data.
63.9(h)(4)	No		
63.9(h)(5)	No		
63.9(h)(6)	Yes		Not applicable due to batch nature of the industry.
63.9(i)	Yes		
63.9(j)	Yes		
63.10(a)	Yes		
63.10(b)(1)	Yes		
63.10(b)(2)(i)	No		

TABLE 1 OF SECTION 63.360—GENERAL PROVISIONS APPLICABILITY TO SUBPART O—Continued

Reference	Applies to sources using 10 tons in subpart O ^a	Applies to sources using 1 to 10 tons in subpart O ^a	Comment
63.10(b)(2)(ii)	Yes		
63.10(b)(2)(iii)	No		
63.10(b)(2)(iv)–(v)	No		A startup, shutdown, and malfunction plan is not required for these standards.
63.10(b)(2)(vi)–(xii)	Yes		
63.10(b)(2)(xiii)	No		
63.10(b)(2)(xiv)	Yes		
63.10(b)(3)	No		§ 63.367 (b) and (c) contains applicability determination requirements.
63.10(c)(1)	Yes		
63.10(c)(2)–(4)	No		Reserved.
63.10(c)(5)	Yes		
63.10(c)(6)	No		
63.10(c)(7)	No		Not applicable due to batch nature of the industry.
63.10(c)(8)	Yes		
63.10(c)(9)	No		Reserved.
63.10(c)(10)–(13)	Yes		
63.10(c)(14)	Yes	No	
63.10(c)(15)	No		A startup, shutdown, and malfunction plan is not required for these standards.
63.10(d)(1)	Yes		
63.10(d)(2)	Yes		
63.10(d)(3)	No		Subpart O does not contain opacity or visible emissions standards.
63.10(d)(4)	Yes		
63.10(d)(5)	No		A startup, shutdown, and malfunction plan is not required for these standards.
63.10(e)(1)	Yes		
63.10(e)(2)(i)	Yes		
63.10(e)(2)(ii)	No		Opacity monitors are not required for these standards.
63.10(e)(3)(i)–(iv)	Yes		
63.10(e)(3)(v)	No		§ 63.366(a)(3) specifies contents and submittal dates for excess emissions and monitoring system performance reports.
63.10(e)(3)(vi)–(viii)	Yes		
63.10(e)(4)	No		Opacity monitors are not required for these standards.
63.10(f)	Yes		
63.11	Yes		
63.12–63.15	Yes		

^a See definition.

(b) Sterilization sources using less than 1 ton (see definition) are not subject to the emissions standards in § 63.362. The recordkeeping requirements of § 63.367(c) apply.

(c) This subpart does not apply to beehive fumigators.

(d) This subpart does not apply to research or laboratory facilities as defined in section 112(c)(7) of title III of the Clean Air Act Amendment of 1990.

(e) This subpart does not apply to ethylene oxide sterilization operations at stationary sources such as hospitals, doctors offices, clinics, or other facilities whose primary purpose is to provide medical services to humans or animals.

(f) The owner or operator of a source, subject to the provisions of the title 40, chapter I, part 63 subpart O, using 1 ton (see definition) is subject to title V permitting requirements. These affected sources, if not major or located at major sources as defined under 40 CFR 70.2, may be deferred by the applicable title V permitting authority from title V permitting requirements for 5 years after the date on which the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit title V permit applications within 12 months of such date (by December 9, 2000). All sources receiving deferrals still must

meet compliance schedule as stated in this § 63.360.

(g) The owner or operator shall comply with the provisions of this subpart as follows:

(1) All sources subject to the emissions standards in § 63.362 with an initial startup date before December 8, 1997, no later than 3 years after the effective date.

(2) All sources subject to the emissions standards in § 63.362 with an initial startup date after December 8, 1997, immediately upon initial startup of the source.

(3) All sources using less than 10 tons that increase their ethylene oxide usage after December 8, 1997 such that any vent becomes subject to the emissions standards in § 63.362, immediately upon becoming subject to the emissions standards.

[59 FR 62589, Dec. 6, 1994, as amended at 61 FR 27788, June 3, 1996]

§ 63.361 Definitions.

Terms and nomenclature used in this subpart are defined in the Clean Air Act (the Act) as amended in 1990, §§ 63.2 and 63.3 of subpart A of this part, or in this section. For the purposes of subpart O, if the same term is defined in subpart A and in this section, it shall have the meaning given in this section.

Aeration room means any vessel or room that is used to facilitate off-gassing of ethylene oxide at a sterilization facility.

Aeration room vent means the point(s) through which the evacuation of ethylene oxide-laden air from an aeration room occurs.

Baseline temperature means any temperature at the outlet point of a catalytic oxidation unit control device or at the exhaust point from the combustion chamber for a thermal oxidation unit control device established during the performance test when the respective unit achieves at least 99-percent control of ethylene oxide emissions.

Chamber exhaust vent means the point(s) through which ethylene oxide-laden air is removed from the sterilization chamber during chamber unloading following the completion of sterilization and associated air washes.

Compliance date means the date by which a source subject to the emissions

standards in § 63.362 is required to be in compliance with the standard.

Effective date means the date of promulgation in the FEDERAL REGISTER notice.

Initial startup date means the date when a source subject to the emissions standards in § 63.362 first begins operation of a sterilization process.

Manifolding emissions means combining ethylene oxide emissions from two or more different vent types for the purpose of controlling these emissions with a single control device.

Maximum ethylene glycol concentration means any concentration of ethylene glycol in the scrubber liquor of an acid-water scrubber control device established during a performance test when the scrubber achieves at least 99-percent control of ethylene oxide emissions.

Maximum liquor tank level means any level of scrubber liquor in the acid-water scrubber liquor recirculation tank established during a performance test when the scrubber achieves at least 99-percent control of ethylene oxide emissions.

Oxidation temperature means the temperature at the outlet point of a catalytic oxidation unit control device or at the exhaust point from the combustion chamber for a thermal oxidation unit control device.

Parametric monitoring means monitoring of a specific operating parameter of the control device that demonstrates that the control device is operating under conditions that meet the standard.

Source(s) using less than 1 ton means source(s) using less than 907 kg (1 ton) of ethylene oxide within all consecutive 12-month periods after December 6, 1996.

Source(s) using 1 ton means source(s) using 907 kg (1 ton) or more of ethylene oxide within any consecutive 12-month period after December 6, 1996.

Source(s) using 1 to 10 tons means source(s) using 907 kg (1 ton) or more of ethylene oxide in any consecutive 12-month period but less than 9,070 kg (10 tons) of ethylene oxide in all consecutive 12-month periods after December 6, 1996.

Source(s) using less than 10 tons means source(s) using less than 9,070 kg (10

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tons) of ethylene oxide in all consecutive 12-month periods after December 6, 1996.

Source(s) using 10 tons means source(s) using 9,070 kg (10 tons) or more of ethylene oxide in any consecutive 12-month period after December 6, 1996.

Sterilization chamber means any enclosed vessel or room that is filled with ethylene oxide gas, or an ethylene oxide/inert gas mixture, for the purpose of sterilizing and/or fumigating at a sterilization facility.

Sterilization chamber vent means the point (prior to the vacuum pump) through which the evacuation of ethylene oxide from the sterilization chamber occurs following sterilization or fumigation, including any subsequent air washes.

Sterilization facility means any stationary source where ethylene oxide is used in the sterilization or fumigation of materials.

Sterilization operation means any time when ethylene oxide is removed from the sterilization chamber through the sterilization chamber vent or the chamber exhaust vent or when ethylene oxide is removed from the aeration room through the aeration room vent.

§ 63.362 Standards.

(a) Each owner or operator of a source subject to the provisions of this subpart shall comply with these requirements on and after the compliance date specified in § 63.360(g). The standards of this section are summarized in Table 1 of this section.

TABLE 1 OF SECTION 63.362.—STANDARDS FOR ETHYLENE OXIDE COMMERCIAL STERILIZERS AND FUMIGATORS

Existing and new sources	Source type	Sterilization chamber vent	Aeration room vent	Chamber exhaust vent
Source size	<907 kg (<1 ton)	99% emission reduction (see §63.362(c)).	No control	Maximum chamber concentration limit of 5,300 ppm prior to activation of the chamber exhaust ¹ (see §63.362(e)(2)).
	≥907 kg and <9,070 kg (≥1 ton and <10 tons).	99% emission reduction (see §63.362(c)).	1 ppm maximum outlet concentration or 99% emission reduction (see §63.362(d)).	Manifold to a control device used to comply with §63.362 (c) or 99 percent emission reduction (see §63.362(e)(1)).

¹ Affected sources may show compliance by manifold emissions to a control device used to comply with § 63.362 (c) or (d) by reducing emissions by at least 99 percent.

(b) *Applicability of emission limits.* The emission limitations of paragraphs (c), (d), and (e) of this section apply during sterilization operation. The emission limitations do not apply during periods of malfunction.

(c) *Sterilization chamber vent at sources using 1 ton.* Each owner or operator of a sterilization source using 1 ton shall reduce ethylene oxide emissions to the atmosphere by at least 99 percent from each sterilization chamber vent.

(d) *Aeration room vent at sources using 10 tons.* Each owner or operator of a sterilization source using 10 tons shall reduce ethylene oxide emissions to the atmosphere from each aeration room vent to a maximum concentration of 1 ppmv or by at least 99 percent, whichever is less stringent, from each aeration room vent.

(e) (1) *Chamber exhaust vent at sources using 10 tons.* Each owner or operator of a sterilization source using 10 tons shall either reduce ethylene oxide emissions to the atmosphere by manifolded emissions from each chamber exhaust vent to a control device used to comply with paragraphs (c) or (d) of this section or shall reduce ethylene oxide emissions by at least 99 percent from each chamber exhaust vent (without manifolded).

(2) *Chamber exhaust vent at sources using 1 to 10 tons.* Each owner or operator of a sterilization source using 1 to 10 tons shall limit ethylene oxide emissions from the chamber exhaust vent to the atmosphere to a maximum concentration of 5,300 ppmv from each chamber exhaust vent. If the owner or operator chooses to limit emissions to 5,300 ppmv concentration through the use of a control device, the owner or operator may choose either to manifold ethylene oxide emissions from each chamber exhaust vent to a control device used to comply with paragraph (c) of this section or to reduce ethylene oxide emissions by at least 99 percent (without manifolded).

§ 63.363 Compliance and performance testing.

(a) (1) The owner or operator of a source subject to emissions standards in § 63.362 shall conduct an initial performance test using the procedures listed in § 63.7 of subpart A of this part

according to the applicability in Table 1 of § 63.360, the procedures listed in this section, and the test methods listed in § 63.365.

(2) The owner or operator of all sources subject to these emissions standards shall complete the performance test within 180 days after the compliance date for the specific source as determined in § 63.360(g).

(b) The following procedures shall be used to determine compliance with the emission limits under § 63.362(c), the sterilization chamber vent standard:

(1) During the performance test required in paragraph (a) of this section, the owner or operator shall determine the efficiency of control devices used to comply with § 63.362(c) using the test methods and procedures in § 63.365(b)(1). The owner or operator shall also determine the following:

(i) For facilities with acid-water scrubbers, the owner or operator shall establish as a site-specific operating parameter during the test methods and procedures in § 63.365(b)(1) either:

(A) The maximum ethylene glycol concentration using the procedures described in § 63.365(e)(1); or

(B) The maximum liquor tank level using the procedures described in § 63.365(e)(2).

(ii) For facilities with catalytic oxidizers or thermal oxidizers, the owner or operator shall establish as a site-specific operating parameter the baseline temperature during the performance test in § 63.365(b)(2) using the procedures described in § 63.365(f)(1).

(2) Following the date on which the initial performance test is completed, the owner or operator shall comply with one of the following provisions:

(i) For facilities with acid-water scrubbers, operation of the facility with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the sterilization chamber vent standard.

(ii) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over three cycles, more than 5.6°C (10°F) below the baseline temperature shall constitute a

violation of the sterilization chamber vent standard.

(c) The following procedures shall be used to determine compliance with the emission limits under § 63.362(d), the aeration room vent standard:

(1) During the performance test required in paragraph (a) of this section, the owner or operator shall determine either:

(i) The concentration of ethylene oxide emitted from the aeration room into the atmosphere (after any control device used to comply with § 63.362(d)) using the methods in § 63.365(c)(1); or

(ii) The efficiency of the control device used to comply with § 63.362(d) using the test methods and procedures in § 63.365(d)(1).

(2) For facilities seeking to comply with paragraph (c)(1)(ii) of this section with catalytic oxidizers or thermal oxidizers, the owner or operator must also establish as a site-specific operating parameter the baseline temperature using the procedures described in § 63.365(f)(2).

(3) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(i) For facilities continuously measuring the ethylene oxide concentration emitted from the aeration room (after any control device), operation of the facility with a 3-hour average ethylene oxide concentration in excess of the 1 ppmv ethylene oxide concentration limit shall constitute a violation of the aeration room vent standard.

(ii) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over three hours, more than 5.6°C (10°F) below the baseline temperature shall constitute a violation of the aeration room vent standard.

(d) The following procedures shall be used to determine compliance with the emission limits under § 63.362(e)(1), the chamber exhaust vent standard for sources using 10 tons:

(1) For facilities manifolding emissions from the chamber exhaust vent to a control device controlling emissions from the sterilization chamber vent and/or the aeration room vent, the

owner or operator shall comply with the appropriate compliance provisions for that vent type and control device (see paragraphs (b) and (c) of this section).

(2) For facilities not manifolding emissions from the chamber exhaust vent (to a control device used to comply with § 63.362(c) or (d)), the owner or operator shall comply with the following:

(i) During the performance test required in paragraph (a) of this section, the owner or operator shall determine the efficiency of control devices used to comply with § 63.362(e)(1) using the test methods and procedures in § 63.365(d)(2) as well as the following:

(A) For facilities with acid-water scrubbers, the owner or operator shall establish as a site-specific operating parameter either:

(1) The maximum ethylene glycol concentration using the procedures described in § 63.365(e)(1); or

(2) The maximum liquor tank level using the procedures described in § 63.365(e)(2).

(B) For facilities with catalytic oxidizers or thermal oxidizers, the owner or operator shall establish as a site-specific operating parameter the baseline temperature using the procedures described in § 63.365(f)(3).

(ii) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(A) For facilities with acid-water scrubbers, operation of the facility with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the chamber exhaust vent standard for sources using 10 tons.

(B) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over the cycle, more than 5.6°C (10°F) below the baseline temperature shall constitute a violation of the chamber exhaust vent standard for sources using 10 tons.

(e) The following procedures shall be used to determine compliance with the

emission limits under § 63.362(e)(2), the chamber exhaust vent standard for sources using 1 to 10 tons:

(1) For facilities manifolding emissions from the chamber exhaust vent to a control device controlling emissions from the sterilization chamber vent, the owner or operator shall comply with the appropriate compliance provisions for the appropriate control technology (see paragraph (b) of this section).

(2) For facilities not manifolding emissions from the chamber exhaust vent (to a control device used to comply with § 63.362(c)), during the performance test required in paragraph (a) of this section, the owner or operator shall either:

(i) Determine the concentration of ethylene oxide in the sterilization chamber immediately prior to the operation of the chamber exhaust using the test methods and procedures in § 63.365(c)(2); or

(ii) Determine the efficiency of control devices used to comply with § 63.362(e)(2) using the test methods and procedures in § 63.365(d)(2) as well as the following:

(A) For facilities with acid-water scrubbers, the owner or operator shall establish as a site-specific operating parameter either:

(1) The maximum ethylene glycol concentration using the procedures described in § 63.365(e)(1); or

(2) The maximum liquor tank level using the procedures described in § 63.365(e)(2).

(B) For facilities with catalytic oxidizers or thermal oxidizers, the owner or operator shall establish as a site-specific operating parameter the baseline temperature using the procedures described in § 63.365(f)(3).

(3) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(i) For facilities determining the ethylene oxide concentration, operation of the facility with the ethylene oxide concentration in the sterilization chamber (immediately prior to activation of the chamber exhaust) in excess of the 5,300 ppmv ethylene oxide concentration standard shall constitute a

violation of the chamber exhaust vent standard for sources using 1 to 10 tons.

(ii) Following the date on which the initial performance test is completed, the owner or operator of a facility shall comply with one of the following provisions:

(A) For facilities with acid-water scrubbers, operation of the facility with an ethylene glycol concentration in the scrubber liquor in excess of the maximum ethylene glycol concentration or the liquor tank level in excess of the maximum liquor tank level shall constitute a violation of the chamber exhaust vent standard for sources using 1 to 10 tons.

(B) For facilities with catalytic oxidizers or thermal oxidizers, operation of the facility with the oxidation temperature, averaged over the cycle, more than 5.6°C (10°F) below the baseline temperature shall constitute a violation of the chamber exhaust vent standard for sources using 1 to 10 tons.

(f) For facilities complying with the emissions limits under § 63.362 with a control technology other than acid-water scrubbers or catalytic or thermal oxidizers:

(1) The owner or operator of the facility shall provide to the Administrator information describing the design and operation of the air pollution control system including recommendations for the operating parameters to be monitored to indicated proper operation and maintenance of the air pollution control system. Based on this information, the Administrator will determine the site-specific operating parameter(s) to be established during the performance test. During the performance test required in paragraph (a) of this section using the methods approved in § 63.365(g), the owner or operator shall determine the site-specific operating parameter(s) approved by the Administrator.

(2) Operation of the facility in a manner that exceeds a site-specific parameter established as a maximum requirement or falls below a site-specific parameter established as a minimum requirement (depending on the parameters monitored) shall constitute a violation of the applicable emissions standard under § 63.362.

§ 63.364 Monitoring requirements.

(a)(1) The owner or operator of a source subject to emissions standards in § 63.362 shall comply with the monitoring requirements in § 63.8 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this section.

(2) Each owner or operator of an ethylene oxide sterilization facility subject to these emissions standards shall monitor the parameters specified in this section. All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(b) For sterilization facilities complying with § 63.363 (b), (d), or (e) through the use of an acid-water scrubber, the owner or operator shall either:

(1) Sample the scrubber liquor and analyze and record once per week the ethylene glycol concentration of the scrubber liquor using the test methods and procedures in § 63.365(e)(1). Monitoring is required during a week only if the scrubber unit has been operated; or

(2) Measure and record once per week the level of the scrubber liquor in the recirculation tank. The owner or operator shall install, maintain, and use a liquid level indicator to measure the scrubber liquor tank level (i.e., a marker on the tank wall, a dipstick, a magnetic indicator, etc.).

(c) For sterilization facilities complying with § 63.363(b), (c), (d), or (e) through the use of catalytic oxidation or thermal oxidation, the owner or operator shall continuously monitor and record the oxidation temperature at the outlet to the catalyst bed or at the exhaust point from the thermal combustion chamber using the temperature monitor described in paragraph (c)(4) of this section.

(1) For the sterilization chamber vent, a data acquisition system for the temperature monitor shall compute and record an average oxidation tem-

perature over the length of the cycle (based on the length of the cycle used during the performance test in § 63.365(b)(2)) and a three-cycle block average every third cycle.

(2) For the aeration room vent, a data acquisition system for the temperature monitor shall compute and record an average oxidation temperature each hour and a 3-hour block average every third hour.

(3) For the chamber exhaust vent, a data acquisition system for the temperature monitor shall compute and record an average oxidation temperature over the length of the cycle (based on the length of the cycle used during the performance test in § 63.365(d)(2)).

(4) The owner or operator shall install, calibrate, operate, and maintain a temperature monitor accurate to within $\pm 5.6^{\circ}\text{C}$ ($\pm 10^{\circ}\text{F}$) to measure the oxidation temperature. The owner or operator shall verify the accuracy of the temperature monitor twice each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(d) For sterilization facilities complying with § 63.363(b), (c), (d), or (e) through the use of a control device other than acid-water scrubbers or catalytic or thermal oxidizers, the owner or operator shall monitor the parameters as approved by the Administrator using the methods and procedures in § 63.365(g).

(e) For sterilization facilities complying with § 63.363(c)(3)(i) or (e)(2)(i) through the use of direct measurement of ethylene oxide concentration, the owner or operator shall follow either paragraph (e)(1) or (2) of this section:

(1) Measure and record once per hour the ethylene oxide concentration at the outlet to the atmosphere from the aeration room vent after any control device according to the procedures specified in § 63.365(c)(1). The owner or operator shall compute and record a 3-hour average every third hour. The

owner or operator will install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of performance specification (PS) 9 in 40 CFR part 60, Appendix B, to measure ethylene oxide. The daily calibration requirements of section 7.2 of PS 9 are required only on days when ethylene oxide emissions are vented to the control device from the aeration room vent.

(2) Measure and record the ethylene oxide concentration in the sterilization chamber immediately before the chamber exhaust is activated according to the procedures specified in § 63.365(c)(2). The owner or operator shall install, calibrate, operate, and maintain a gas chromatograph consistent with the requirements of PS 9 to measure ethylene oxide concentration. The daily calibration requirements of section 7.2 of PS 9 are required only on days when the chamber exhaust is activated.

(f) For sterilization facilities complying with § 63.363(d)(1) or (e)(1) by manifolded emissions from the chamber exhaust vent to a control device controlling emissions from another vent type, the owner or operator shall monitor the control device to which emissions from the chamber exhaust vent are manifolded using the appropriate monitoring requirements in paragraphs (a) through (e) of this section and record the monitoring data.

§ 63.365 Test methods and procedures.

(a) *Performance testing.* The owner or operator of a source subject to the emissions standards in § 63.362 shall comply with the performance testing requirements in § 63.7 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this section.

(b) *Efficiency at the sterilization chamber vent.* The following procedures shall be used to determine the efficiency of all types of control devices used to comply with § 63.362(c), sterilization chamber vent standard.

(1) *First evacuation of the sterilization chamber.* This procedure shall be performed on an empty sterilizer for the duration of the first evacuation under normal operating conditions (i.e., sterilization cycle pressure and temperature) and charging a typical amount of

ethylene oxide to the sterilization chamber.

(i) The amount of ethylene oxide loaded into the sterilizer (W_c) shall be determined by either:

(A) Weighing the ethylene oxide gas cylinder(s) used to charge the sterilizer before and after charging. Record these weights to the nearest 45 g (0.1 lb). Multiply the total mass of gas charged by the weight percent ethylene oxide present in the gas.

(B) Installing calibrated rotameters at the sterilizer inlet and measuring flow rate and duration of sterilizer charge. Use the following equation to convert flow rate to weight of ethylene oxide:

$$W_c = F_v \times t \times \%EO_v \times \left(\frac{MW}{SV} \right)$$

where:

W_c =weight of ethylene oxide charged, g (lb)

F_v =volumetric flow rate, liters per minute (L/min) corrected to 20 °C and 101.325 kilopascals (kPa) (scf per minute (scfm) corrected to 68 °F and 1 atmosphere of pressure (atm)); the flowrate must be constant during time (t)

t=time, min

$\%EO_v$ =volume fraction ethylene oxide

SV=standard volume, 24.05 liters per mole (L/mole)=22.414 L/mole ideal gas law constant corrected to 20 °C and 101.325 kPa (385.32 scf per mole (scf/mole)=359 scf/mole ideal gas law constant corrected to 68 °F and 1 atm).

MW=molecular weight of ethylene oxide, 44.05 grams per gram-mole (g/g-mole) (44.05 pounds per pound-mole (lb/lb-mole)), or

(C) Calculating the mass based on the conditions of the chamber immediately after it has been charged using the following equation:

$$W_c = \frac{MW \times \%EO_v \times P \times V}{R \times T}$$

where:

P=chamber pressure, kPa (psia)

V=chamber volume, liters (L) (ft³)

R=gas constant, 8.313 L•kPa/g-mole•(10.73 psia•ft³/mole•°R)

T=temperature, K (°R)

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NOTE: If the ethylene oxide concentration is in weight percent, use the following equation to calculate mole fraction:

$$\%EO_v = \frac{W_{EO}}{W_{EO} + \left(W_x \times \frac{MW}{MW_x} \right)}$$

where:

W_{EO} =weight percent of ethylene oxide

W_x =weight percent of compound in the balance of the mixture

MW_x =molecular weight of compound in the balance gas mixture

(ii) The residual mass of ethylene oxide in the sterilizer shall be determined by recording the chamber temperature, pressure, and volume after the completion of the first evacuation and using the following equation:

$$W_r = \frac{MW \times \%EO_v \times P \times V}{R \times T}$$

where:

W_r =weight of ethylene oxide remaining in chamber (after the first evacuation), in g (lb)

(iii) Calculate the total mass of ethylene oxide at the inlet to the control device (W_i) by subtracting the residual mass (W_r) calculated in paragraph (b)(1)(ii) of this section from the charged weight (W_c) calculated in paragraph (b)(1)(i) of this section.

(iv) The mass of ethylene oxide emitted from the control device outlet (W_o) shall be calculated by continuously monitoring the flow rate and concentration using the following procedure.

(A) Measure the flow rate through the control device exhaust continuously during the first evacuation using the procedure found in 40 CFR part 60, appendix A, Test Methods 2, 2A, 2C, or 2D, as appropriate. (Method 2D (using orifice plates or Rootstypemeters) is recommended for measuring flow rates from sterilizer control devices.) Record the flow rate at 1-minute intervals throughout the test cycle, taking the first reading within 15 seconds after time zero. Time zero is defined as the moment when the pressure in the sterilizer is released. Correct the flow to standard conditions (20°C and 101.325

kPa (68°F and 1 atm)) and determine the flow rate for the run as outlined in the test methods listed in paragraph (b) of this section.

(B) The Tedlar bag sampling procedure in section 7.1 of Test Method 18, 40 CFR part 60, appendix A (hereafter referred to as Method 18) shall be used to collect samples of exhaust gas throughout the test cycle. Follow the procedures in paragraph (b)(1)(iv)(B)(1) or (2) of this section.

(1) Continuously sample a slipstream of the control device outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(i) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection.

(ii) Prepare a graph of volumetric flow rate versus time corresponding to the period each bag was sampled. Integrate the area under the curve to determine the volume.

(iii) Calculate the mass of ethylene oxide for each bag by using the following equation:

$$W_b = C \times V \times \frac{MW}{SV} \times \frac{1}{10^6}$$

where:

W_b =Mass of ethylene oxide for each bag, g (lb)

C =concentration of ethylene oxide in ppmv

V =volume of gas exiting the control device corresponding to each bag sample corrected to standard conditions, L (ft³)

$1/10^6$ =correction factor $L_{EO}/10^6 L_{TOTALGAS}$ (ft³_{EO}/10⁶ ft³_{TOTALGAS})

Sum the mass corresponding to each bag (W_b) used during the evacuation to calculate the total mass (W_o).

(iv) Calculate the efficiency by the equation in paragraph (b)(1)(v) of this section.

(2) Collect a Tedlar bag (or equivalent collection device) sample at 1-minute intervals throughout the test cycle. (The first bag must be in place and sampling at $t=15$ seconds. A fresh bag shall be in place and sampling exhaust gas at each 1-minute mark after time zero.) Collect enough sample gas in each bag to complete the analysis. Each bag sample shall be labeled with the sampling time and run number.

(i) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection. (Syringe samples should be analyzed within 4 hours.)

(ii) Plot a concentration versus time curve using the average concentration, in ppmv, determined in each bag sample. Prepare another graph of volumetric flow rate versus time. Calculate the mass flow at each 1-minute interval point by selecting the concentration (C) and volumetric flow rate corrected to standard conditions (F_v) at each 1-min point.

(iii) Use the following equation to determine the mass flow rate of ethylene oxide exiting the control device:

$$W_t = C \times F_v \times \frac{MW}{SV} \times \frac{1}{10^6}$$

where:

W_t = mass flow rate of ethylene oxide

(iv) Plot a curve of mass flow rate versus time and integrate for total mass of ethylene oxide for the control device outlet (W_o).

(v) Calculate efficiency by the equations in paragraphs (b)(1) (v) and (vi) of this section.

(C) As an alternative to paragraph (b)(1)(ii) of this section, the direct interface sampling and analysis procedure described in Method 18, section 7.2, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a gas chromatograph with flame ionization detector (GC/FID) or photoionization detector (GC/PID). This procedure may be used only if a vent sample may be sampled and analyzed by the GC/FID or GC/PID at least once per minute.

(1) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(2) Follow the procedures in paragraphs (b)(1)(iv)(B)(2) (ii) through (v) of this section.

(v) Determine control device efficiency (% Eff) using the following equation:

$$\% \text{Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff = percent efficiency

W_i = mass flow rate into the control device

W_o = mass flow rate out of the control device

(vi) Repeat the procedures in paragraphs (b)(1) (i) through (v) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(2) *Last evacuation of the sterilization chamber.* One of the following procedures (paragraph (b)(2) (i) or (ii) of this section) shall be performed during the last evacuation of the sterilization chamber:

(i) The direct interface sampling and analysis procedure described in Method 18, section 7.2, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a GC/FID or GC/PID; this procedure may be used only if a vent may be sampled and analyzed by the GC/FID or GC/PID once per minute for the duration of the last cycle.

(A) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(B) Follow the procedures in paragraphs (b)(1)(iv)(B)(2) (ii) through (iv) of this section.

(C) Determine control device efficiency (% Eff) using the following equation:

$$\% \text{Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff = percent efficiency

W_i = mass flow rate into the control device

W_o = mass flow rate out of the control device

(D) Repeat the procedures in paragraphs (b)(2)(i) (A) through (C) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(ii) The Tedlar bag sampling procedure in section 7.1 of Method 18, may be used to collect samples of inlet and exhaust gas for the duration of the last cycle.

(A) Continuously sample a slipstream of the control device inlet and outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(B) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection.

(C) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(D) Determine control device efficiency (% Eff) using the equation in paragraph (b)(2)(i)(C) of this section.

(E) Repeat the procedures in paragraphs (b)(2)(ii)(A) through (D) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(iii) In the event that the outlet concentration from the control device is below the detection limit for ethylene oxide for determining the efficiency in paragraph (b)(2)(i)(C) or (ii)(D) of this section, the owner or operator shall assume the control device is meeting the standard in § 63.362(e)(1) or (2) if the

inlet ethylene oxide concentration is at or below approximately 50 ppmv.

(c) *Concentration determination.* The following procedures shall be used to determine the ethylene oxide concentration as the monitored parameter established in § 63.363(c) and (e) for aeration room emissions and chamber exhaust vents, respectively, and to continuously monitor the ethylene oxide concentration for aeration room vents as established in § 63.364(e)(1) and to monitor the ethylene oxide concentration before activation of the chamber exhaust for chamber exhaust vents as established in § 63.364(e)(2).

(1) *Aeration room vent.* For determining the ethylene oxide concentration for aeration room emissions, the procedures outlined in section 7.2 of Method 18 shall be used. Repeat these procedures three times. The arithmetic average of the ethylene oxide concentration of the three test runs shall determine the overall outlet ethylene oxide concentration from the control device. Compliance testing of gas chromatographs shall be performed using PS 9 in 40 CFR part 60.

(2) *Sterilization chamber prior to activation of the chamber exhaust.* For determining the ethylene oxide concentration in the sterilization chamber before activation of the chamber exhaust, the procedures outlined in sections 7.2 or 7.3 of Method 18 shall be used. The ethylene oxide concentration from one test run shall determine the outlet ethylene oxide concentration from the chamber exhaust vent. Compliance testing of gas chromatographs shall be performed using PS 9 in 40 CFR part 60.

(d) *Efficiency determination at the aeration room vent and at the chamber exhaust vent (not manifolded).* The following procedures shall be used to determine the efficiency of a control device used to comply with § 63.362(d) or (e), the aeration room vent standard or the chamber exhaust vent standards (without manifolding the chamber exhaust vent emissions to another vent type):

(1) *Aeration room vent.* For determining the efficiency of aeration room vent control devices, either of the following test methods (paragraph (d)(1)(i) or (ii) of this section) may be used:

(i) the direct interface sampling and analysis procedure described in Method 18, section 7.2, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a GC/FID or GC/PID; this procedure may be used only if a vent may be sampled and analyzed by the GC/FID or GC/PID once every 5 minutes throughout a 1-hour test run.

(A) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(B) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(C) Determine control device efficiency (% Eff) using the following equation:

$$\% \text{Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff=percent efficiency

W_i =mass flow rate into the control device

W_o =mass flow rate out of the control device

(D) Repeat the procedures in paragraphs (d)(1)(i)(A) through (C) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(ii) The Tedlar bag sampling procedure in section 7.1 of Method 18 may be used to collect samples of inlet and exhaust gas throughout a 1-hour test run.

(A) Continuously sample a slipstream of the control device inlet and outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be re-attached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(B) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag

samples shall be analyzed within 8 hours of collection.

(C) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(D) Determine control device efficiency (% Eff) using the equation in paragraph (d)(1)(i)(C) of this section.

(E) Repeat the procedures in paragraphs (d)(1)(ii)(A) through (D) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(2) *Chamber exhaust vent (not manifolded)*. For determining the efficiency of non-manifolded chamber exhaust vent control devices, either of the following test methods (paragraph (d)(2)(i) or (ii) of this section) may be used:

(i) The direct interface sampling and analysis procedures described in Method 18, section 7.2 or 7.3, may be used to continuously monitor ethylene oxide concentration at the inlet and outlet of the control device using a GC/FID or GC/PID; these procedures may be used only if a vent may be sampled and analyzed by the GC/FID or GC/PID once per minute for the duration of each cycle when the chamber exhaust vent is operated.

(A) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the sample.

(B) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(C) Determine control device efficiency (% Eff) using the following equation: where:

$$\% \text{Eff} = \frac{W_i - W_o}{W_i} \times 100$$

where:

% Eff = percent efficiency

W_i = mass flow rate into the control device

W_o = mass flow rate out of the control device

(D) Repeat the procedures in paragraphs (d)(2)(i)(A) through (C) of this section three times. The arithmetic average percent efficiency of the three

runs shall determine the overall efficiency of the control device.

(ii) The Tedlar bag sampling procedure in section 7.1 of Method 18 may be used to collect samples of inlet and exhaust gas for the duration of each cycle when the chamber exhaust vent is operated.

(A) Continuously sample a slipstream of the control device inlet and outlet into a Tedlar bag by having a Tedlar bag attached to the slipstream for the entire duration of the run for an integrated bag sample. Whenever a Tedlar bag is full, a new bag must be reattached immediately. Note the time the bag is changed so the sample time and corresponding flow rates can be determined for each bag.

(B) Follow the procedures in section 6 of Method 18 and choose the appropriate column, analytical apparatus, and calibration gases for the analysis of the bag samples collected. The bag samples shall be analyzed within 8 hours of collection.

(C) Follow the procedures in paragraphs (b)(1)(iv)(B)(2)(ii) through (iv) of this section.

(D) Determine control device efficiency (% Eff) using the equation in paragraph (d)(2)(i)(C) of this section.

(E) Repeat the procedures in paragraphs (d)(2)(ii)(A) through (D) of this section three times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(iii) In the event that the outlet concentration from the control device is below the detection limit for ethylene oxide for determining the efficiency in paragraph (d)(2)(i)(C) or (ii)(D) of this section, the owner or operator shall assume the control device is meeting the standard in § 63.362(e)(1) or (2) if the inlet ethylene oxide concentration is at or below approximately 50 ppmv.

(e) *Determination of baseline parameters for acid-water scrubbers.* The procedures in this paragraph shall be used to determine the monitored parameters established in § 63.363(b), (d), or (e) for acid-water scrubbers and to monitor the parameters as established in § 63.364(b).

(1) *Ethylene glycol concentration.* For determining the ethylene glycol concentration, the facility owner or opera-

tor shall establish the maximum ethylene glycol concentration as the ethylene glycol concentration averaged over three test runs; the sampling and analysis procedures in ASTM D 3695-88, Standard Test Method for Volatile Alcohols in Water By Direct Aqueous-Injection Gas Chromatography, (incorporated by reference—see § 63.14) shall be used to determine the ethylene glycol concentration.

(2) *Scrubber liquor tank level.* For determining the scrubber liquor tank level, the sterilization facility owner or operator shall establish the maximum liquor tank level based on a single measurement of the liquor tank level during one test run.

(f) *Determination of baseline temperature for oxidation units.* The procedures in this paragraph shall be used to demonstrate the baseline temperature required in § 63.363(b), (c), (d), or (e) for catalytic oxidation units or thermal oxidation units and to continuously monitor the oxidation temperature as established in § 63.364(c).

(1) *Sterilization chamber vent.* The sterilization facility owner or operator shall establish the baseline temperature for the sterilization chamber vent as the temperature for the catalytic oxidation unit or the oxidation temperature at the exhaust point from the thermal oxidation unit averaged over three test runs using the procedures in paragraph (b)(2) of this section.

(2) *Aeration room vent.* The sterilization facility owner or operator shall establish the baseline temperature for the aeration room vent as the temperature for the catalytic oxidation unit or the oxidation temperature at the exhaust point from the thermal oxidation unit averaged over three test runs using the procedures in paragraph (d)(1) of this section.

(3) *Chamber exhaust vent.* The sterilization facility owner or operator shall establish the baseline temperature for the chamber exhaust vent as the temperature for the catalytic oxidation unit or the oxidation temperature at the exhaust point from the thermal oxidation unit averaged over three test runs using the procedures in paragraph (d)(2) of this section.

(g) An owner or operator of a sterilization facility seeking to demonstrate compliance with the standards found at § 63.362(c), (d), or (e) with a control device other than an acid-water scrubber or catalytic or thermal oxidation unit shall provide to the Administrator the information requested under § 63.363(f). The owner or operator shall submit: a description of the device; test results collected in accordance with § 63.363(f) verifying the performance of the device for controlling ethylene oxide emissions to the atmosphere to the levels required by the applicable standards; the appropriate operating parameters that will be monitored; and the frequency of measuring and recording to establish continuous compliance with the standards. The monitoring plan submitted identifying the compliance monitoring is subject to the Administrator's approval. The owner or operator of the sterilization facility shall install, calibrate, operate, and maintain the monitor(s) approved by the Administrator based on the information submitted by the owner or operator. The owner or operator shall include in the information submitted to the Administrator proposed performance specifications and quality assurance procedures for their monitors. The Administrator may request further information and shall approve appropriate test methods and procedures.

(h) An owner or operator of a sterilization facility seeking to demonstrate compliance with the standards found at §§ 63.362(d) or (e) with a monitoring device or procedure other than a gas chromatograph shall provide to the Administrator information describing the operation of the monitoring device or procedure and the parameter(s) that would indicate proper operation and maintenance of the device or procedure. The Administrator may request further information and will specify appropriate test methods and procedures.

§ 63.366 Reporting requirements.

(a) The owner or operator of a source subject to the emissions standards in § 63.362 shall fulfill all reporting requirements in §§ 63.10(a), (d), (e), and (f) of subpart A, according to the applica-

bility in Table 1 of § 63.360. These reports will be made to the Administrator at the appropriate address identified in § 63.13 of subpart A of this part.

(1) Reports required by subpart A and this section may be sent by U.S. mail, fax, or by another courier.

(i) Submittals sent by U.S. mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(3) Content and submittal dates for excess emissions and monitoring system performance reports. All excess emissions and monitoring system performance reports and all summary reports, if required per § 63.10(e)(3) (vii) and (viii) of subpart A of this part, shall be delivered or postmarked within 30 days following the end of each calendar half or quarter as appropriate (see § 63.10(e)(3) (i) through (iv) for applicability). Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in § 63.10(c) (5) through (13) of subpart A of this part as applicable in Table 1 of § 63.360 and information from any calibration tests in which the monitoring equipment is not in compliance with PS-9 or the method used for temperature calibration. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(b) *Construction and reconstruction.* The owner or operator of each source using 10 tons shall fulfill all requirements for construction or reconstruction of a source in § 63.5 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this paragraph.

(1) *Applicability.* (i) This paragraph and § 63.5 of subpart A of this part implement the preconstruction review requirements of section 112(i)(1) for

sources subject to these emissions standards. In addition, this paragraph and § 63.5 of subpart A of this part include other requirements for constructed and reconstructed sources that are or become subject to these emissions standards.

(ii) After the effective date, the requirements in this section and in § 63.5 of subpart A of this part apply to owners or operators who construct a new source or reconstruct a source subject to these emissions standards after December 6, 1994. New or reconstructed sources subject to these emissions standards with an initial startup date before the effective date are not subject to the preconstruction review requirements specified in paragraphs (b) (2) and (3) of this section and § 63.5(d) (3) and (4) and (e) of subpart A of this part.

(2) After the effective date, whether or not an approved permit program is effective in the State in which a source is (or would be) located, no person may construct a new source or reconstruct a source subject to these emissions standards, or reconstruct a source such that the source becomes a source subject to these emissions standards, without obtaining advance written approval from the Administrator in accordance with the procedures specified in paragraph (b)(3) of this section and § 63.5(d) (3) and (4) and (e) of subpart A of this part.

(3) *Application for approval of construction or reconstruction.* The provisions of paragraph (b)(3) of this section and § 63.5(d) (3) and (4) of subpart A of this part implement section 112(i)(1) of the Act.

(i) *General application requirements.* (A) An owner or operator who is subject to the requirements of paragraph (b)(2) of this section shall submit to the Administrator an application for approval of the construction of a new source subject to these emissions standards, the reconstruction of a source subject to these emissions standards, or the reconstruction of a source such that the source becomes a source subject to these emissions standards. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but not sooner

than the effective date) if the construction or reconstruction commences after the effective date. The application shall be submitted as soon as practicable before the initial startup date but no later than 60 days after the effective date if the construction or reconstruction had commenced and the initial startup date had not occurred before the effective date. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of paragraph (c)(1)(iii) of this section. The owner or operator may submit the application for approval well in advance of the date construction or reconstruction is planned to commence in order to ensure a timely review by the Administrator and that the planned commencement date will not be delayed.

(B) A separate application shall be submitted for each construction or reconstruction. Each application for approval of construction or reconstruction shall include at a minimum:

(1) The applicant's name and address.

(2) A notification of intention to construct a new source subject to these emissions standards or make any physical or operational change to a source subject to these emissions standards that may meet or has been determined to meet the criteria for a reconstruction, as defined in § 63.2 of subpart A of this part.

(3) The address (i.e., physical location) or proposed address of the source.

(4) An identification of the relevant standard that is the basis of the application.

(5) The expected commencement date of the construction or reconstruction.

(6) The expected completion date of the construction or reconstruction.

(7) The anticipated date of (initial) startup of the source.

(8) The type and quantity of hazardous air pollutants emitted by the source, reported in units and averaging times and in accordance with the test methods specified in the standard, or if actual emissions data are not yet available, an estimate of the type and quantity of hazardous air pollutants expected to be emitted by the source reported in units and averaging times specified. The owner or operator may submit percent reduction information,

if the standard is established in terms of percent reduction. However, operating parameters, such as flow rate, shall be included in the submission to the extent that they demonstrate performance and compliance.

(9) Other information as specified in paragraph (b)(3)(ii) of this section and § 63.5(d)(3) of subpart A of this part.

(C) An owner or operator who submits estimates or preliminary information in place of the actual emissions data and analysis required in paragraphs (b)(3)(i)(B)(8) and (ii) of this section shall submit the actual, measured emissions data and other correct information as soon as available but no later than with the notification of compliance status required in paragraph (c)(2) of this section.

(ii) *Application for approval of construction.* Each application for approval of construction shall include, in addition to the information required in paragraph (b)(3)(i)(B) of this section, technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source subject to these emissions standards, including an identification of each point of emission for each hazardous air pollutant that is emitted (or could be emitted) and a description of the planned air pollution control system (equipment or method) for each emission point. The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations. An owner or operator who submits approximations of control efficiencies under paragraph (b)(3) of this section shall submit the actual control efficiencies as specified in paragraph (b)(3)(i)(C) of this section.

(4) *Approval of construction or reconstruction based on prior State preconstruction review.* (i) The Administrator may approve an application for

construction or reconstruction specified in paragraphs (b)(2) and (3) of this section and § 63.5(d)(3) and (4) of subpart A of this part if the owner or operator of a new or reconstructed source who is subject to such requirement demonstrates to the Administrator's satisfaction that the following conditions have been (or will be) met:

(A) The owner or operator of the new or reconstructed source subject to these emissions standards has undergone a preconstruction review and approval process in the State in which the source is (or would be) located before the effective date and has received a federally enforceable construction permit that contains a finding that the source will meet these emissions standards as proposed, if the source is properly built and operated;

(B) In making its finding, the State has considered factors substantially equivalent to those specified in § 63.5(e)(1) of subpart A of this part.

(ii) The owner or operator shall submit to the Administrator the request for approval of construction or reconstruction no later than the application deadline specified in paragraph (b)(3)(i) of this section. The owner or operator shall include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in § 63.5 of subpart A of this part. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction.

(c) *Notification requirements.* The owner or operator of each source subject to the emissions standards in § 63.362 shall fulfill all notification requirements in § 63.9 of subpart A of this part, according to the applicability in Table 1 of § 63.360, and in this paragraph.

(1) *Initial notifications.* (i)(A) If a source that otherwise would be subject to these emissions standards subsequently increases its use of ethylene oxide within any consecutive 12-month period after December 6, 1996, such that the source becomes subject to these emissions standards or other requirements, such source shall be subject to

the notification requirements of § 63.9 of subpart A of this part.

(B) Sources subject to these emissions standards may use the application for approval of construction or reconstruction under paragraph (b)(3)(ii) of this section and § 63.5(d)(3) of subpart A of this part, respectively, if relevant to fulfill the initial notification requirements.

(ii) The owner or operator of a new or reconstructed source subject to these emissions standards that has an initial startup date after the effective date and for which an application for approval of construction or reconstruction is required under paragraph (b)(3) of this section and § 63.5(d)(3) and (4) of subpart A of this part shall provide the following information in writing to the Administrator:

(A) A notification of intention to construct a new source subject to these emissions standards, reconstruct a source subject to these emissions standards, or reconstruct a source such that the source becomes a source subject to these emissions standards with the application for approval of construction or reconstruction as specified in paragraph (b)(3)(i)(A) of this section;

(B) A notification of the date when construction or reconstruction was commenced, submitted simultaneously with the application for approval of construction or reconstruction, if construction or reconstruction was commenced before the effective date of these standards;

(C) A notification of the date when construction or reconstruction was commenced, delivered or postmarked not later than 30 days after such date, if construction or reconstruction was commenced after the effective date of these standards;

(D) A notification of the anticipated date of startup of the source, delivered or postmarked not more than 60 days nor less than 30 days before such date; and

(E) A notification of the actual date of initial startup of the source, delivered or postmarked within 15 calendar days after that date.

(iii) After the effective date, whether or not an approved permit program is effective in the State in which a source subject to these emissions standards is

(or would be) located, an owner or operator who intends to construct a new source subject to these emissions standards or reconstruct a source subject to these emissions standards, or reconstruct a source such that it becomes a source subject to these emissions standards, shall notify the Administrator in writing of the intended construction or reconstruction. The notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date of these standards) if the construction or reconstruction commences after the effective date of the standard. The notification shall be submitted as soon as practicable before the initial startup date but no later than 60 days after the effective date of this standard if the construction or reconstruction had commenced and the initial startup date has not occurred before the standard's effective date. The notification shall include all the information required for an application for approval of construction or reconstruction as specified in paragraph (b)(3) of this section and § 63.5(d)(3) and (4) of subpart A of this part. For sources subject to these emissions standards, the application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of § 63.9 of subpart A of this part.

(2) If an owner or operator of a source subject to these emissions standards submits estimates or preliminary information in the application for approval of construction or reconstruction required in paragraph (b)(3)(ii) of this section and § 63.5(d)(3) of subpart A of this part, respectively, in place of the actual emissions data or control efficiencies required in paragraphs (b)(3)(i)(B)(8) and (ii) of this section, the owner or operator shall submit the actual emissions data and other correct information as soon as available but no later than with the initial notification of compliance status.

(3) The owner or operator of any existing sterilization facility subject to this subpart shall also include the amount of ethylene oxide used during the previous consecutive 12-month period in the initial notification report

required by §63.9(b)(2) and (3) of subpart A of this part. For new sterilization facilities subject to this subpart, the amount of ethylene oxide used shall be an estimate of expected use during the first consecutive 12-month period of operation.

§63.367 Recordkeeping requirements.

(a) The owner or operator of a source subject to the emissions standards in §63.362 shall comply with the recordkeeping requirements in §§63.10(b) and (c) of subpart A of this part, according to the applicability in Table 1 of §63.360, and in this section.

(b) The owners or operators of a source using 1 to 10 tons not subject to an emissions standard in §63.362 shall maintain records of ethylene oxide use on a 12-month rolling average basis (until the source changes its operations to become a source subject to an emissions standard in §63.362). These records shall be kept onsite at the source for a period of 5 years.

(c) The owners or operators of a source using less than 1 ton shall maintain records of ethylene oxide use on a 12-month rolling average basis (until the source changes its operations to become a source subject to the emissions standards in §63.362). These records shall be kept onsite at the source for a period of 5 years.

Subpart P [Reserved]

Subpart Q—National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers

SOURCE: 59 FR 46350, Sept. 8, 1994, unless otherwise noted.

§63.400 Applicability.

(a) The provisions of this subpart apply to all new and existing industrial process cooling towers that are operated with chromium-based water treatment chemicals on or after September 8, 1994, and are either major sources or are integral parts of facilities that are major sources as defined in §63.401.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners

and operators of IPCT's subject to this subpart.

§63.401 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Chromium-based water treatment chemicals means any combination of chemical substances containing chromium used to treat water.

Commenced means, with respect to construction or reconstruction of an IPCT, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

Compliance date means the date by which an affected IPCT is required to be in compliance with this subpart.

Construction means the on-site fabrication, erection, or installation of an IPCT.

Cooling tower means an open water recirculating device that uses fans or natural draft to draw or force ambient air through the device to cool warm water by direct contact.

Effective date means September 8, 1994, for this subpart.

Existing IPCT means any affected IPCT that is not a new IPCT.

Industrial process cooling tower, also written as "IPCT," means any cooling tower that is used to remove heat that is produced as an input or output of a chemical or industrial process(es), as well as any cooling tower that cools industrial processes in combination with any heating, ventilation, or air conditioning system.

Initial startup means the initiation of recirculation water flow within the cooling tower.

Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

New IPCT means any affected IPCT the construction or reconstruction of which commenced after August 12, 1993.

Owner or operator means any person who owns, leases, operates, controls, or supervises an IPCT.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

Reconstruction means the replacement of components of an affected or a previously unaffected IPCT to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new IPCT.

Responsible official means one of the following:

(1) For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the Administrator.

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility

for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).

(4) For affected sources (as defined in this part) applying for or subject to a title V permit: "responsible official" shall have the same meaning as defined in part 70 of this chapter or Federal title V regulations (42 U.S.C. 7661), whichever is applicable.

Water treatment chemicals means any combination of chemical substances used to treat water in cooling towers, including corrosion inhibitors, antiscalants, dispersants, and any other chemical substances used to treat water.

§ 63.402 Standard.

No owner or operator of an IPCT shall use chromium-based water treatment chemicals in any affected IPCT.

§ 63.403 Compliance dates.

The requirements of § 63.402 of this subpart shall be applied on the following schedule:

(a) For existing IPCT's, the compliance date shall be 18 months after September 8, 1994.

(b) For new IPCT's that have an initial startup before September 8, 1994, the compliance date shall be September 8, 1994.

(c) For new IPCT's that have an initial startup on or after September 8, 1994, the compliance date shall be the date of the initial startup.

§ 63.404 Compliance demonstrations.

No routine monitoring, sampling, or analysis is required. In accordance with section 114 of the Act, the Administrator or delegated authority can require cooling water sample analysis of an IPCT if there is information to indicate that the IPCT is not in compliance with the requirements of § 63.402 of this subpart. If cooling water sample analysis is required:

(a) The water sample analysis shall be conducted in accordance with Method 7196, Chromium, Hexavalent (Colorimetric), contained in the Third Edition of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (November 1986) and its Revision I, (December 1987), which are available for the cost

of \$110.00 from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, (202) 783-3238 (document number 955-001-00000-1; or Method 3500-Cr D, Colorimetric Method, contained in the 18th Edition of "Standard Methods for the Examination of Water and Wastewater" (1992), which is available from the American Public Health Association, 1015 15th Street, NW., Washington, DC 20005. These methods were approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected as a part of Docket A-91-65, located at the Air and Radiation Docket and Information Center, room M1500, EPA Central Docket Section, 401 M Street, SW., Washington, DC. Copies may be inspected at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(b) On or after 3 months after the compliance date, a cooling water sample residual hexavalent chromium concentration in excess of 0.5 parts per million by weight shall indicate a violation of § 63.402.

§ 63.405 Notification requirements.

(a) *Initial notification.* (1) In accordance with § 63.9(b) of subpart A, owners or operators of all affected IPCT's that have an initial startup before September 8, 1994, shall notify the Administrator in writing. The notification, which shall be submitted not later than 12 months after September 8, 1994, shall provide the following information:

- (i) The name and address of the IPCT owner or operator;
- (ii) The address (i.e., physical location) of the affected IPCT;
- (iii) A statement that the notification is being submitted as required by this subpart; and
- (iv) A description of the type of water treatment program used in the affected IPCT, including the chemical name of each corrosion inhibitor ingredient

used; the average concentration of those corrosion inhibitor ingredients maintained in the cooling water; and the material safety data sheet for each water treatment chemical or chemical compound used in the IPCT.

(2) In accordance with § 63.9(b) of subpart A, owners or operators of all affected IPCT's that have an initial startup on or after September 8, 1994, shall notify the Administrator in writing that the source is subject to the relevant standard no later than 12 months after initial startup. The notification shall provide all the information required in paragraphs (a)(1)(i) through (a)(1)(iv) of this section.

(b) *Notification of compliance status.* (1) In accordance with § 63.9(h) of subpart A, owners or operators of affected IPCT's shall submit to the Administrator a notification of compliance status within 60 days of the date on which the IPCT is brought into compliance with § 63.402 of this subpart and not later than 18 months after September 8, 1994.

(2) The notification of compliance status must:

- (i) Be signed by a responsible official who also certifies the accuracy of the report;
- (ii) Certify that source has complied with § 63.402 of this subpart; and
- (iii) Include the information required in paragraph (a)(1)(iv) of this section.
- (iv) Include the following statement:

I certify that no chromium-based water treatment chemicals have been introduced since (the initial compliance date) into any IPCT located within the facility for any purpose.

§ 63.406 Recordkeeping and reporting requirements.

To demonstrate continuing compliance with § 63.402 of this subpart, the owner or operator of each affected IPCT shall maintain copies of the initial notification and the notification of compliance status as required by § 63.405 of this subpart for a period of at least 5 years onsite.

TABLE 1 TO SUBPART Q—GENERAL PROVISIONS APPLICABILITY TO SUBPART Q

Reference	Applies to Subpart Q	Comment
63.1	Yes.	

TABLE 1 TO SUBPART Q—GENERAL PROVISIONS APPLICABILITY TO SUBPART Q—Continued

Reference	Applies to Subpart Q	Comment
63.2	Yes.	
63.3	No.	
63.4	Yes.	
63.5	No.	
63.6 (a), (b), (c), and (j)	Yes.	
63.6 (d), (e), (f), (g), (h), and (i)	No.	
63.7	No.	
63.8	No.	
63.9 (a), (b)(1), (b)(3), (c), (h)(1), (h)(3), (h)(6), and (j)	Yes.	
63.9 (b)(2), (b)(4), (b)(5), (b)(6), (d), (e), (f), (g), (h)(2), (h)(4), (h)(5)	No	Requirements for initial notifications and notifications of compliance status are specified in §63.405(a) and §63.405(b), respectively, of subpart Q; other provisions of subpart A are not relevant to IPCT's.
63.10 (a), (b)(1), (b)(2)(xii), (b)(2)(xiv), (b)(3), (d), and (f)	Yes	Section 63.406 requires an onsite record retention of 5 years.
63.10 (b)(2) (i) to (xi), (c), and (e)	No.	
63.11	No.	
63.12 to 63.15	Yes.	

Subpart R—National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

SOURCE: 59 FR 64318, Dec. 14, 1994, unless otherwise noted.

§ 63.420 Applicability.

(a) The affected source to which the provisions of this subpart apply is each bulk gasoline terminal, except those bulk gasoline terminals:

(1) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, E_T , of the following equation is less than 1, and complies with requirements in paragraphs (c), (d), (e), and (f) of this section:

$$E_T = CF[0.59(T_F)(1-CE)+0.17(T_E)+0.08(T_{ES})+0.038(T_I)+8.5 \times 10^{-6}(C)+KQ]+0.04(OE)$$

where:

E_T = emissions screening factor for bulk gasoline terminals;

$CF=0.161$ for bulk gasoline terminals and pipeline breakout stations that do not handle any reformulated or oxygenated gasoline containing 7.6 percent by volume or greater methyl tert-butyl ether (MTBE), OR

$CF=1.0$ for bulk gasoline terminals and pipeline breakout stations that handle reformulated or oxygenated

gasoline containing 7.6 percent by volume or greater MTBE;

CE =control efficiency limitation on potential to emit for the vapor processing system used to control emissions from fixed-roof gasoline storage vessels [value should be added in decimal form (percent divided by 100)];

T_F = total number of fixed-roof gasoline storage vessels without an internal floating roof;

T_E = total number of external floating roof gasoline storage vessels with only primary seals;

T_{ES} = total number of external floating roof gasoline storage vessels with primary and secondary seals;

T_I = total number of fixed-roof gasoline storage vessels with an internal floating roof;

C = number of valves, pumps, connectors, loading arm valves, and open-ended lines in gasoline service;

Q =gasoline throughput limitation on potential to emit or gasoline throughput limit in compliance with paragraphs (c), (d), and (f) of this section (liters/day);

$K = 4.52 \times 10^{-6}$ for bulk gasoline terminals with uncontrolled loading racks (no vapor collection and processing systems), OR

$K = (4.5 \times 10^{-9})(EF + L)$ for bulk gasoline terminals with controlled loading racks (loading racks that have vapor collection and processing

systems installed on the emission stream);

EF=emission rate limitation on potential to emit for the gasoline cargo tank loading rack vapor processor outlet emissions (mg of total organic compounds per liter of gasoline loaded);

OE=other HAP emissions screening factor for bulk gasoline terminals or pipeline breakout stations (tons per year). OE equals the total HAP from other emission sources not specified in parameters in the equations for E_T or E_P . If the value of $0.04(OE)$ is greater than 5 percent of either E_T or E_P , then paragraphs (a)(1) and (b)(1) of this section shall not be used to determine applicability;

$L = 13$ mg/l for gasoline cargo tanks meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in §60.501 of this chapter, *OR*

$L = 304$ mg/l for gasoline cargo tanks not meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in §60.501 of this chapter; or

(2) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source, as defined in §63.2 of subpart A of this part.

(b) The affected source to which the provisions of this subpart apply is each pipeline breakout station, except those pipeline breakout stations:

(1) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, E_P , of the following equation is less than 1, and complies with requirements in paragraphs (c), (d), (e), and (f) of this section:

$$E_P = CF \left[6.7(T_F)(1-CE) + 0.21(T_E) + 0.093(T_{ES}) + 0.1(T_I) + 5.31 \times 10^{-6}(C) + 0.04(OE) \right];$$

where:

EP=emissions screening factor for pipeline breakout stations,

and the definitions for CF, T_F , CE, T_E , T_{ES} , T_I , C, and OE are the same as provided in paragraph (a)(1) of this section; or

(2) For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source, as defined in §63.2 of subpart A of this part.

(c) A facility for which the results, E_T or E_P , of the calculation in paragraph (a)(1) or (b)(1) of this section has been documented and is less than 1.0 but greater than or equal to 0.50, is exempt from the requirements of this subpart, except that the owner or operator shall:

(1) Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section, and approved by the Administrator, is exceeded in any rolling 30-day period; and

(2) Maintain records and provide reports in accordance with the provisions of §63.428(i).

(d) A facility for which the results, E_T or E_P , of the calculation in paragraph (a)(1) or (b)(1) of this section has been documented and is less than 0.50, is exempt from the requirements of this subpart, except that the owner or operator shall:

(1) Operate the facility such that none of the facility parameters used to calculate results under paragraph (a)(1) or (b)(1) of this section is exceeded in any rolling 30-day period; and

(2) Maintain records and provide reports in accordance with the provisions of §63.428(j).

(e) The provisions of paragraphs (a)(1) and (b)(1) of this section shall not be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:

(1) Located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station, or

(2) Located within a contiguous area and under common control with other sources not specified in paragraphs (a)(1) or (b)(1) of this section, that emit or have the potential to emit a hazardous air pollutant.

(f) Upon request by the Administrator, the owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of any

paragraphs in this section including, but not limited to, the parameters and assumptions used in the applicable equation in paragraph (a)(1) or (b)(1) of this section, shall demonstrate compliance with those paragraphs.

(g) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart that is also subject to applicable provisions of 40 CFR part 60, subpart Kb or XX of this chapter shall comply only with the provisions in each subpart that contain the most stringent control requirements for that facility.

(h) Each owner or operator of an affected source bulk gasoline terminal or pipeline breakout station is subject to the provisions of 40 CFR part 63, subpart A—General Provisions, as indicated in Table 1.

(i) A bulk gasoline terminal or pipeline breakout station with a Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery complying with subpart CC, §§ 63.646, 63.648, 63.649, and 63.650 is not subject to subpart R standards, except as specified in subpart CC, § 63.650.

(j) *Rules Stayed for Reconsideration.* Notwithstanding any other provision of this subpart, the December 14, 1995 compliance date for existing facilities in § 63.424(e) and § 63.428(a), (i)(1), and (j)(1) of this subpart is stayed from December 8, 1995, to March 7, 1996.

[59 FR 64318, Dec. 14, 1994, as amended at 60 FR 43260, Aug. 18, 1995; 60 FR 62992, Dec. 8, 1995; 62 FR 9092, Feb. 28, 1997]

§ 63.421 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act; in subparts A, K, Ka, Kb, and XX of part 60 of this chapter; or in subpart A of this part. All terms defined in both subpart A of part 60 of this chapter and subpart A of this part shall have the meaning given in subpart A of this part. For purposes of this subpart, definitions in this section supersede definitions in other parts or subparts.

Bulk gasoline terminal means any gasoline facility which receives gasoline by pipeline, ship or barge, and has a gasoline throughput greater than 75,700

liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State or local law and discoverable by the Administrator and any other person.

Controlled loading rack, for the purposes of § 63.420, means a loading rack equipped with vapor collection and processing systems that reduce displaced vapor emissions to no more than 80 milligrams of total organic compounds per liter of gasoline loaded, as measured using the test methods and procedures in § 60.503 (a) through (c) of this chapter.

Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in the gasoline liquid transfer and vapor collection systems. This definition also includes the entire vapor processing system except the exhaust port(s) or stack(s).

Gasoline cargo tank means a delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load.

In gasoline service means that a piece of equipment is used in a system that transfers gasoline or gasoline vapors.

Limitation(s) on potential to emit means limitation(s) limiting a source's potential to emit as defined in § 63.2 of subpart A of this part.

Operating parameter value means a value for an operating or emission parameter of the vapor processing system (e.g., temperature) which, if maintained continuously by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with the applicable emission standard. The operating parameter value is determined using the procedures outlined in § 63.425(b).

Oxygenated gasoline means the same as defined in 40 CFR 80.2(rr).

Pipeline breakout station means a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline for reinjection and continued transportation by pipeline or to other facilities.

Reformulated gasoline means the same as defined in 40 CFR 80.2(ee).

Uncontrolled loading rack means a loading rack used to load gasoline cargo tanks that is not a controlled loading rack.

Vapor-tight gasoline cargo tank means a gasoline cargo tank which has demonstrated within the 12 preceding months that it meets the annual certification test requirements in § 63.425(e), and which is subject at all times to the test requirements in § 63.425 (f), (g), and (h).

Volatile organic liquid (VOL) means, for the purposes of this subpart, gasoline.

[59 FR 64318, Dec. 14, 1994, as amended at 62 FR 9093, Feb. 28, 1997]

§ 63.422 Standards: Loading racks.

(a) Each owner or operator of loading racks at a bulk gasoline terminal subject to the provisions of this subpart shall comply with the requirements in § 60.502 of this chapter except for paragraphs (b), (c), and (j) of that section. For purposes of this section, the term “affected facility” used in § 60.502 of this chapter means the loading racks that load gasoline cargo tanks at the bulk gasoline terminals subject to the provisions of this subpart.

(b) Emissions to the atmosphere from the vapor collection and processing systems due to the loading of gasoline cargo tanks shall not exceed 10 milligrams of total organic compounds per liter of gasoline loaded.

(c) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall comply with § 60.502(e) of this chapter as follows:

(1) For the purposes of this section, the term “tank truck” as used in § 60.502(e) of this chapter means “cargo tank.”

(2) Section 60.502(e)(5) of this chapter is changed to read: The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline cargo tank will not be reloaded at the facility until vapor tightness documentation for that gasoline cargo tank is obtained which documents that:

(i) The gasoline cargo tank meets the applicable test requirements in § 63.425(e);

(ii) For each gasoline cargo tank failing the test in § 63.425 (f) or (g) at the facility, the cargo tank either:

(A) Before repair work is performed on the cargo tank, meets the test requirements in § 63.425 (g) or (h), or

(B) After repair work is performed on the cargo tank before or during the tests in § 63.425 (g) or (h), subsequently passes the annual certification test described in § 63.425(e).

(d) Each owner or operator shall meet the requirements in all paragraphs of this section as expeditiously as practicable, but no later than December 15, 1997, at existing facilities and upon startup for new facilities.

[59 FR 64318, Dec. 14, 1994; 60 FR 32913, June 26, 1995]

§ 63.423 Standards: Storage vessels.

(a) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall equip each gasoline storage vessel with a design capacity greater than or equal to 75 m³ according to the requirements in § 60.112b(a) (1) through (4) of this chapter, except for the requirements in §§ 60.112b(a)(1) (iv) through (ix) and 60.112b(a)(2)(ii) of this chapter.

(b) Each owner or operator shall equip each gasoline external floating roof storage vessel with a design capacity greater than or equal to 75 m³ according to the requirements in § 60.112b(a)(2)(ii) of this chapter if such storage vessel does not currently meet the requirements in paragraph (a) of this section.

(c) Each gasoline storage vessel at existing bulk gasoline terminals and pipeline breakout stations shall be in compliance with the requirements in paragraphs (a) and (b) of this section as expeditiously as practicable, but no later than December 15, 1997. At new bulk gasoline terminals and pipeline breakout stations, compliance shall be achieved upon startup.

§ 63.424 Standards: Equipment leaks.

(a) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall perform a monthly leak inspection of all equipment in gasoline service. For this inspection, detection

methods incorporating sight, sound, and smell are acceptable. Each piece of equipment shall be inspected during the loading of a gasoline cargo tank.

(b) A log book shall be used and shall be signed by the owner or operator at the completion of each inspection. A section of the log shall contain a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.

(c) Each detection of a liquid or vapor leak shall be recorded in the log book. When a leak is detected, an initial attempt at repair shall be made as soon as practicable, but no later than 5 calendar days after the leak is detected. Repair or replacement of leaking equipment shall be completed within 15 calendar days after detection of each leak, except as provided in paragraph (d) of this section.

(d) Delay of repair of leaking equipment will be allowed upon a demonstration to the Administrator that repair within 15 days is not feasible. The owner or operator shall provide the reason(s) a delay is needed and the date by which each repair is expected to be completed.

(e) Initial compliance with the requirements in paragraphs (a) through (d) of this section shall be achieved by existing sources as expeditiously as practicable, but no later than December 15, 1997. For new sources, initial compliance shall be achieved upon startup.

(f) As an alternative to compliance with the provisions in paragraphs (a) through (d) of this section, owners or operators may implement an instrument leak monitoring program that has been demonstrated to the Administrator as at least equivalent.

(g) Owners and operators shall not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

- (1) Minimize gasoline spills;
- (2) Clean up spills as expeditiously as practicable;
- (3) Cover all open gasoline containers with a gasketed seal when not in use;
- (4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation

and recycling devices, such as oil/water separators.

[59 FR 64318, Dec. 14, 1994, as amended at 61 FR 7723, Feb. 29, 1996]

§ 63.425 Test methods and procedures.

(a) Each owner or operator subject to the emission standard in § 63.422(b) or § 60.112b(a)(3)(ii) of this chapter shall conduct a performance test on the vapor processing system according to the test methods and procedures in § 60.503, except a reading of 500 ppm shall be used to determine the level of leaks to be repaired under § 60.503(b). If a flare is used to control emissions, and emissions from this device cannot be measured using these methods and procedures, the provisions of § 63.11(b) shall apply.

(b) For each performance test conducted under paragraph (a) of this section, the owner or operator shall determine a monitored operating parameter value for the vapor processing system using the following procedure:

(1) During the performance test, continuously record the operating parameter under § 63.427(a);

(2) Determine an operating parameter value based on the parameter data monitored during the performance test, supplemented by engineering assessments and the manufacturer's recommendations; and

(3) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency and averaging time, including data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the emission standard in § 63.422(b) or § 60.112b(a)(3)(ii) of this chapter.

(c) For performance tests performed after the initial test, the owner or operator shall document the reasons for any change in the operating parameter value since the previous performance test.

(d) The owner or operator of each gasoline storage vessel subject to the provisions of § 63.423 shall comply with § 60.113b of this chapter. If a closed vent system and control device are used, as specified in § 60.112b(a)(3) of this chapter, to comply with the requirements

in §63.423, the owner or operator shall also comply with the requirements in paragraph (b) of this section.

(e) *Annual certification test.* The annual certification test for gasoline cargo tanks shall consist of the following test methods and procedures:

(1) Method 27, appendix A, 40 CFR part 60. Conduct the test using a time period (t) for the pressure and vacuum

tests of 5 minutes. The initial pressure (P_i) for the pressure test shall be 460 mm H₂ O (18 in. H₂ O), gauge. The initial vacuum (V_i) for the vacuum test shall be 150 mm H₂ O (6 in. H₂ O), gauge. The maximum allowable pressure and vacuum changes (Δp , Δv) are as shown in the second column of Table 2 of this paragraph.

TABLE 2—ALLOWABLE CARGO TANK TEST PRESSURE OR VACUUM CHANGE

Cargo tank or compartment capacity, liters (gal)	Annual certification-allowable pressure or vacuum change (Δp , Δv) in 5 minutes, mm H ₂ O (in. H ₂ O)	Allowable pressure change (Δp) in 5 minutes at any time, mm H ₂ O (in. H ₂ O)
9,464 or more (2,500 or more)	25 (1.0)	64 (2.5)
9,463 to 5,678 (2,499 to 1,500)	38 (1.5)	76 (3.0)
5,679 to 3,785 (1,499 to 1,000)	51 (2.0)	89 (3.5)
3,782 or less (999 or less)	64 (2.5)	102 (4.0)

(2) Pressure test of the cargo tank's internal vapor valve as follows:

(i) After completing the tests under paragraph (e)(1) of this section, use the procedures in Method 27 to repressurize the tank to 460 mm H₂ O (18 in. H₂ O), gauge. Close the tank's internal vapor valve(s), thereby isolating the vapor return line and manifold from the tank.

(ii) Relieve the pressure in the vapor return line to atmospheric pressure, then reseal the line. After 5 minutes, record the gauge pressure in the vapor return line and manifold. The maximum allowable 5-minute pressure increase is 130 mm H₂ O (5 in. H₂ O).

(f) *Leak detection test.* The leak detection test shall be performed using Method 21, appendix A, 40 CFR part 60, except omit section 4.3.2 of Method 21. A vapor-tight gasoline cargo tank shall have no leaks at any time when tested according to the procedures in this paragraph.

(1) The leak definition shall be 21,000 ppm as propane. Use propane to calibrate the instrument, setting the span at the leak definition. The response time to 90 percent of the final stable reading shall be less than 8 seconds for the detector with the sampling line and probe attached.

(2) In addition to the procedures in Method 21, include the following procedures:

(i) Perform the test on each compartment during loading of that compartment or while the compartment is still under pressure.

(ii) To eliminate a positive instrument drift, the dwell time for each leak detection shall not exceed two times the instrument response time. Purge the instrument with ambient air between each leak detection. The duration of the purge shall be in excess of two instrument response times.

(iii) Attempt to block the wind from the area being monitored. Record the highest detector reading and location for each leak.

(g) *Nitrogen pressure decay field test.* For those cargo tanks with manifolded product lines, this test procedure shall be conducted on each compartment.

(1) Record the cargo tank capacity. Upon completion of the loading operation, record the total volume loaded. Seal the cargo tank vapor collection system at the vapor coupler. The sealing apparatus shall have a pressure tap. Open the internal vapor valve(s) of the cargo tank and record the initial headspace pressure. Reduce or increase, as necessary, the initial headspace pressure to 460 mm H₂ O (18.0 in. H₂ O), gauge by releasing pressure or by adding commercial grade nitrogen gas from a high pressure cylinder capable of maintaining a pressure of 2,000 psig.

(i) The cylinder shall be equipped with a compatible two-stage regulator with a relief valve and a flow control metering valve. The flow rate of the nitrogen shall be no less than 2 cfm. The maximum allowable time to pressurize cargo tanks with headspace volumes of 1,000 gallons or less to the appropriate pressure is 4 minutes. For cargo tanks with a headspace of greater than 1,000 gallons, use as a maximum allowable time to pressurize 4 minutes or the result from the equation below, whichever is greater.

$$T = V_h \times 0.004$$

where:

T = maximum allowable time to pressurize the cargo tank, min;

V_h = cargo tank headspace volume during testing, gal.

(2) It is recommended that after the cargo tank headspace pressure reaches approximately 460 mm H₂O (18 in. H₂O), gauge, a fine adjust valve be used to adjust the headspace pressure to 460 mm H₂O (18.0 in. H₂O), gauge for the next 30 ± 5 seconds.

(3) Reseal the cargo tank vapor collection system and record the headspace pressure after 1 minute. The measured headspace pressure after 1 minute shall be greater than the minimum allowable final headspace pressure (P_F) as calculated from the following equation:

$$P_F = 18 \left(\frac{(18 - N)}{18} \right) \left(\frac{V_s}{5(V_h)} \right)$$

where:

(P_F) = minimum allowable final headspace pressure, in. H₂O, gauge;

V_s = total cargo tank shell capacity, gal;

V_h = cargo tank headspace volume after loading, gal;

18.0 = initial pressure at start of test, in. H₂O, gauge;

N = 5-minute continuous performance standard at any time from the third column of Table 2 of § 63.425(e)(i), inches H₂O.

(4) Conduct the internal vapor valve portion of this test by repressurizing the cargo tank headspace with nitrogen to 460 mm H₂O (18 in. H₂O), gauge.

Close the internal vapor valve(s), wait for 30 ± 5 seconds, then relieve the pressure downstream of the vapor valve in the vapor collection system to atmospheric pressure. Wait 15 seconds, then reseal the vapor collection system. Measure and record the pressure every minute for 5 minutes. Within 5 seconds of the pressure measurement at the end of 5 minutes, open the vapor valve and record the headspace pressure as the "final pressure."

(5) If the decrease in pressure in the vapor collection system is less than at least one of the interval pressure change values in Table 3 of this paragraph, or if the final pressure is equal to or greater than 20 percent of the 1-minute final headspace pressure determined in the test in paragraph (g)(3) of this section, then the cargo tank is considered to be a vapor-tight gasoline cargo tank.

TABLE 3—PRESSURE CHANGE FOR INTERNAL VAPOR VALVE TEST

Time interval	Interval pressure change, mm H ₂ O (in. H ₂ O)
After 1 minute	28 (1.1)
After 2 minutes	56 (2.2)
After 3 minutes	84 (3.3)
After 4 minutes	112 (4.4)
After 5 minutes	140 (5.5)

(h) *Continuous performance pressure decay test.* The continuous performance pressure decay test shall be performed using Method 27, appendix A, 40 CFR Part 60. Conduct only the positive pressure test using a time period (t) of 5 minutes. The initial pressure (P_i) shall be 460 mm H₂O (18 in. H₂O), gauge. The maximum allowable 5-minute pressure change (Δp) which shall be met at any time is shown in the third column of Table 2 of § 63.425(e)(1).

[59 FR 64318, Dec. 14, 1994; 60 FR 7627, Feb. 8, 1995; 60 FR 32913, June 26, 1995]

§ 63.426 Alternative means of emission limitation.

For determining the acceptability of alternative means of emission limitation for storage vessels under § 63.423, the provisions of § 60.114b of this chapter apply.

§ 63.427 Continuous monitoring.

(a) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous monitoring system (CMS) as specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, except as allowed in paragraph (a)(5) of this section.

(1) Where a carbon adsorption system is used, a continuous emission monitoring system (CEMS) capable of measuring organic compound concentration shall be installed in the exhaust air stream.

(2) Where a refrigeration condenser system is used, a continuous parameter monitoring system (CPMS) capable of measuring temperature shall be installed immediately downstream from the outlet to the condenser section. Alternatively, a CEMS capable of measuring organic compound concentration may be installed in the exhaust air stream.

(3) Where a thermal oxidation system is used, a CPMS capable of measuring temperature shall be installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs.

(4) Where a flare is used, a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, shall be installed in proximity to the pilot light to indicate the presence of a flame.

(5) Monitoring an alternative operating parameter or a parameter of a vapor processing system other than those listed in this paragraph will be allowed upon demonstrating to the Administrator's satisfaction that the alternative parameter demonstrates continuous compliance with the emission standard in § 63.422(b) or § 60.112b(a)(3)(ii) of this chapter.

(b) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall operate the vapor processing system in a manner not to exceed the operating parameter value for the parameter described in paragraphs (a)(1) and (a)(2) of this section, or to go below the operating parameter value for the parameter described in paragraph (a)(3) of this section,

and established using the procedures in § 63.425(b). In cases where an alternative parameter pursuant to paragraph (a)(5) of this section is approved, each owner or operator shall operate the vapor processing system in a manner not to exceed or not to go below, as appropriate, the alternative operating parameter value. Operation of the vapor processing system in a manner exceeding or going below the operating parameter value, as specified above, shall constitute a violation of the emission standard in § 63.422(b).

(c) Each owner or operator of gasoline storage vessels subject to the provisions of § 63.423 shall comply with the monitoring requirements in § 60.116b of this chapter, except records shall be kept for at least 5 years. If a closed vent system and control device are used, as specified in § 60.112b(a)(3) of this chapter, to comply with the requirements in § 63.423, the owner or operator shall also comply with the requirements in paragraph (a) of this section.

§ 63.428 Reporting and recordkeeping.

(a) The initial notifications required for existing affected sources under § 63.9(b)(2) shall be submitted by 1 year after an affected source becomes subject to the provisions of this subpart or by December 16, 1996, whichever is later. Affected sources that are major sources on December 16, 1996 and plan to be area sources by December 15, 1997 shall include in this notification a brief, non-binding description of and schedule for the action(s) that are planned to achieve area source status.

(b) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall keep records of the test results for each gasoline cargo tank loading at the facility as follows:

(1) Annual certification testing performed under § 63.425(e); and

(2) Continuous performance testing performed at any time at that facility under § 63.425 (f), (g), and (h).

(3) The documentation file shall be kept up-to-date for each gasoline cargo tank loading at the facility. The documentation for each test shall include, as a minimum, the following information:

(i) Name of test:
Annual Certification Test—Method 27 (§ 63.425(e)(1)),
Annual Certification Test—Internal Vapor Valve (§ 63.425(e)(2)),
Leak Detection Test (§ 63.425(f)),
Nitrogen Pressure Decay Field Test (§ 63.425(g)), or
Continuous Performance Pressure Decay Test (§ 63.425(h)).

(ii) Cargo tank owner's name and address.

(iii) Cargo tank identification number.

(iv) Test location and date.

(v) Tester name and signature.

(vi) Witnessing inspector, if any: Name, signature, and affiliation.

(vii) Vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing.

(viii) Test results: Pressure or vacuum change, mm of water; time period of test; number of leaks found with instrument and leak definition.

(c) Each owner or operator of a bulk gasoline terminal subject to the provisions of this subpart shall:

(1) Keep an up-to-date, readily accessible record of the continuous monitoring data required under § 63.427(a). This record shall indicate the time intervals during which loadings of gasoline cargo tanks have occurred or, alternatively, shall record the operating parameter data only during such loadings. The date and time of day shall also be indicated at reasonable intervals on this record.

(2) Record and report simultaneously with the notification of compliance status required under § 63.9(h):

(i) All data and calculations, engineering assessments, and manufacturer's recommendations used in determining the operating parameter value under § 63.425(b); and

(ii) The following information when using a flare under provisions of § 63.11(b) to comply with § 63.422(b):

(A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted); and

(B) All visible emissions readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required under § 63.425(a).

(3) If an owner or operator requests approval to use a vapor processing system or monitor an operating parameter other than those specified in § 63.427(a), the owner or operator shall submit a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application.

(d) Each owner or operator of storage vessels subject to the provisions of this subpart shall keep records and furnish reports as specified in § 60.115b of this chapter, except records shall be kept for at least 5 years.

(e) Each owner or operator complying with the provisions of § 63.424 (a) through (d) shall record the following information in the log book for each leak that is detected:

(1) The equipment type and identification number;

(2) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell);

(3) The date the leak was detected and the date of each attempt to repair the leak;

(4) Repair methods applied in each attempt to repair the leak;

(5) "Repair delayed" and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak;

(6) The expected date of successful repair of the leak if the leak is not repaired within 15 days; and

(7) The date of successful repair of the leak.

(f) Each owner or operator subject to the provisions of § 63.424 shall report to the Administrator a description of the types, identification numbers, and locations of all equipment in gasoline service. For facilities electing to implement an instrument program under § 63.424(f), the report shall contain a full description of the program.

(1) In the case of an existing source or a new source that has an initial startup date before the effective date, the report shall be submitted with the notification of compliance status required under § 63.9(h), unless an extension of compliance is granted under § 63.6(i). If an extension of compliance

is granted, the report shall be submitted on a date scheduled by the Administrator.

(2) In the case of new sources that did not have an initial startup date before the effective date, the report shall be submitted with the application for approval of construction, as described in § 63.5(d).

(g) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall include in a semiannual report to the Administrator the following information, as applicable:

(1) Each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility;

(2) Periodic reports required under paragraph (d) of this section; and

(3) The number of equipment leaks not repaired within 5 days after detection.

(h) Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart shall submit an excess emissions report to the Administrator in accordance with § 63.10(e)(3), whether or not a CMS is installed at the facility. The following occurrences are excess emissions events under this subpart, and the following information shall be included in the excess emissions report, as applicable:

(1) Each exceedance or failure to maintain, as appropriate, the monitored operating parameter value determined under § 63.425(b). The report shall include the monitoring data for the days on which exceedances or failures to maintain have occurred, and a description and timing of the steps taken to repair or perform maintenance on the vapor collection and processing systems or the CMS.

(2) Each instance of a nonvapor-tight gasoline cargo tank loading at the facility in which the owner or operator failed to take steps to assure that such cargo tank would not be reloaded at the facility before vapor tightness documentation for that cargo tank was obtained.

(3) Each reloading of a nonvapor-tight gasoline cargo tank at the facility before vapor tightness documentation for that cargo tank is obtained by

the facility in accordance with § 63.422(c)(2).

(4) For each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection:

(i) The date on which the leak was detected;

(ii) The date of each attempt to repair the leak;

(iii) The reasons for the delay of repair; and

(iv) The date of successful repair.

(i) Each owner or operator of a facility meeting the criteria in § 63.420(c) shall perform the requirements of this paragraph (i), all of which will be available for public inspection:

(1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to § 63.420(c) after December 16, 1996, or at startup for new facilities the methods, procedures, and assumptions supporting the calculations for determining criteria in § 63.420(c);

(2) Maintain records to document that the facility parameters established under § 63.420(c) have not been exceeded; and

(3) Report annually to the Administrator that the facility parameters established under § 63.420(c) have not been exceeded.

(4) At any time following the notification required under paragraph (i)(1) of this section and approval by the Administrator of the facility parameters, and prior to any of the parameters being exceeded, the owner or operator may submit a report to request modification of any facility parameter to the Administrator for approval. Each such request shall document any expected HAP emission change resulting from the change in parameter.

(j) Each owner or operator of a facility meeting the criteria in § 63.420(d) shall perform the requirements of this paragraph (j), all of which will be available for public inspection:

(1) Document and report to the Administrator not later than December 16, 1996 for existing facilities, within 30 days for existing facilities subject to § 63.420(d) after December 16, 1996, or at startup for new facilities the use of the

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emission screening equations in §63.420(a)(1) or (b)(1) and the calculated value of E_T or E_P ;

(2) Maintain a record of the calculations in §63.420 (a)(1) or (b)(1), including methods, procedures, and assumptions supporting the calculations for determining criteria in §63.420(d); and

(3) At any time following the notification required under paragraph (j)(1) of this section, and prior to any of the parameters being exceeded, the owner or operator may notify the Administrator of modifications to the facility parameters. Each such notification shall document any expected HAP

emission change resulting from the change in parameter.

[59 FR 64318, Dec. 14, 1994, as amended at 61 FR 7723, Feb. 29, 1996; 62 FR 9093, Feb. 28, 1997]

§63.429 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(l) of the Act, the authority contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) The authority conferred in §63.426 and §63.427(a)(5) will not be delegated to any State.

TABLE 1 TO SUBPART R—GENERAL PROVISIONS APPLICABILITY TO SUBPART R

Reference	Applies to subpart R	Comment
63.1(a)(1)	Yes	Section reserved
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	
63.1(a)(6)(8)	Yes	Section reserved
63.1(a)(9)	No	
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12)–(a)(14)	Yes	
63.1(b)(1)	No	Subpart R specifies applicability in §63.420
63.1(b)(2)	Yes	
63.1(b)(3)	No	Subpart R specifies reporting and recordkeeping for some large area sources in §63.428
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Some small sources are not subject to subpart R
63.1(c)(3)	No	
63.1(c)(4)	Yes	Section reserved
63.1(c)(5)	Yes	
63.1(d)	No	Section reserved
63.1(e)	Yes	
63.2	Yes	Additional definitions in §63.421
63.3(a)–(c)	Yes	
63.4(a)(1)–(a)(3)	Yes	Section reserved
63.4(a)(4)	No	
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)(1)	Yes	Section reserved
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	Section reserved
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	
63.5(d)(1)	Yes	
63.5(d)(2)	Yes	Section reserved
63.5(d)(3)	Yes	
63.5(d)(4)	Yes	
63.5(e)	Yes	
63.5(f)(1)	Yes	

TABLE 1 TO SUBPART R—GENERAL PROVISIONS APPLICABILITY TO SUBPART R—Continued

Reference	Applies to subpart R	Comment
63.5(f)(2)	Yes	
63.6(a)	Yes	
63.6(b)(1)	Yes	
63.6(b)(2)	Yes	
63.6(b)(3)	Yes	
63.6(b)(4)	Yes	
63.6(b)(5)	Yes	
63.6(b)(6)	No	Section reserved
63.6(b)(7)	Yes	
63.6(c)(1)	No	Subpart R specifies the compliance date
63.6(c)(2)	Yes	
63.6(c)(3)–(c)(4)	No	Sections reserved
63.6(c)(5)	Yes	
63.6(d)	No	Section reserved
63.6(e)	Yes	
63.6(f)(1)	Yes	
63.6(f)(2)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h)	No	Subpart R does not require COMS
63.6(i)(1)–(i)(14)	Yes	
63.6(i)(15)	No	Section reserved
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)	Yes	
63.7(a)(3)	Yes	
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)(1)	Yes	
63.7(e)(2)	Yes	
63.7(e)(3)	Yes	
63.7(e)(4)	Yes	
63.7(f)	Yes	
63.7(g)	Yes	
63.7(h)	Yes	
63.8(a)(1)	Yes	
63.8(a)(2)	Yes	
63.8(a)(3)	No	Section reserved
63.8(a)(4)	Yes	
63.8(b)(1)	Yes	
63.8(b)(2)	Yes	
63.8(b)(3)	Yes	
63.8(c)(1)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	Yes	
63.8(c)(5)	No	Subpart R does not require COMS
63.8(c)(6)–(c)(8)	Yes	
63.8(d)	Yes	
63.8(e)	Yes	
63.8(f)(1)–(f)(5)	Yes	
63.8(f)(6)	Yes	
63.8(g)	Yes	
63.9(a)	Yes	
63.9(b)(1)	Yes	
63.9(b)(2)	No	Subpart R allows additional time for existing sources to submit initial notification. Sec. 63.428(a) specifies submittal by 1 year after being subject to the rule or December 16, 1996, whichever is later.
63.9(b)(3)	Yes	
63.9(b)(4)	Yes	
63.9(b)(5)	Yes	

TABLE 1 TO SUBPART R—GENERAL PROVISIONS APPLICABILITY TO SUBPART R—Continued

Reference	Applies to subpart R	Comment
63.9(c)	Yes	Section reserved
63.9(d)	Yes	
63.9(e)	Yes	
63.9(f)	Yes	
63.9(g)	Yes	
63.9(h)(1)–(h)(3)	Yes	
63.9(h)(4)	No	
63.9(h)(5)–(h)(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	Sections reserved
63.10(b)(1)	Yes	
63.10(b)(2)	Yes	
63.10(b)(3)	Yes	
63.10(c)(1)	Yes	
63.10(c)(2)–(c)(4)	No	
63.10(c)(5)–(c)(8)	Yes	
63.10(c)(9)	No	
63.10(c)(5)–(c)(8)	Yes	
63.10(d)(1)	Yes	Section reserved
63.10(d)(2)	Yes	
63.10(d)(3)	Yes	
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	
63.10(e)	Yes	
63.10(f)	Yes	
63.11(a)–(b)	Yes	
63.12(a)–(c)	Yes	
63.13(a)–(c)	Yes	
63.14(a)–(b)	Yes	
63.15(a)–(b)	Yes	

[59 FR 64318, Dec. 14, 1994, as amended at 61 FR 7724, Feb. 29, 1996]

Subpart S—National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry

SOURCE: 63 FR 18617, Apr. 15, 1998, unless otherwise noted.

§ 63.440 Applicability.

(a) The provisions of this subpart apply to the owner or operator of processes that produce pulp, paper, or paperboard; that are located at a plant site that is a major source as defined in § 63.2 of subpart A of this part; and that use the following processes and materials:

(1) Kraft, soda, sulfite, or semi-chemical pulping processes using wood; or

(2) Mechanical pulping processes using wood; or

(3) Any process using secondary or non-wood fibers.

(b) The affected source to which the existing source provisions of this subpart apply is as follows:

(1) For the processes specified in paragraph (a)(1) of this section, the affected source is the total of all HAP emission points in the pulping and bleaching systems; or

(2) For the processes specified in paragraphs (a)(2) or (a)(3) of this section, the affected source is the total of all HAP emission points in the bleaching system.

(c) The new source provisions of this subpart apply to the total of all HAP emission points at new or existing sources as follows:

(1) Each affected source defined in paragraph (b)(1) of this section that commences construction or reconstruction after December 17, 1993;

(2) Each pulping system or bleaching system for the processes specified in paragraph (a)(1) of this section that commences construction or reconstruction after December 17, 1993;

(3) Each additional pulping or bleaching line at the processes specified in

paragraph (a)(1) of this section, that commences construction after December 17, 1993;

(4) Each affected source defined in paragraph (b)(2) of this section that commences construction or reconstruction after March 8, 1996; or

(5) Each additional bleaching line at the processes specified in paragraphs (a)(2) or (a)(3) of this section, that commences construction after March 8, 1996.

(d) Each existing source shall achieve compliance no later than April 16, 2001, except as provided in paragraphs (d)(1) through (d)(3) of this section.

(1) Each kraft pulping system shall achieve compliance with the pulping system provisions of § 63.443 for the equipment listed in § 63.443(a)(1)(ii) through (a)(1)(v) as expeditiously as practicable, but in no event later than April 17, 2006 and the owners and operators shall establish dates, update dates, and report the dates for the milestones specified in § 63.455(b).

(2) Each dissolving-grade bleaching system at either kraft or sulfite pulping mills shall achieve compliance with the bleach plant provisions of § 63.445 of this subpart as expeditiously as practicable, but in no event later than 3 years after the promulgation of the revised effluent limitation guidelines and standards under 40 CFR 430.14 through 430.17 and 40 CFR 430.44 through 430.47.

(3) Each bleaching system complying with the Voluntary Advanced Technology Incentives Program for Effluent Limitation Guidelines in 40 CFR 430.24, shall comply with the requirements specified in either paragraph (d)(3)(i) or (d)(3)(ii) of this section for the effluent limitation guidelines and standards in 40 CFR 430.24.

(i) Comply with the bleach plant provisions of § 63.445 of this subpart as expeditiously as practicable, but in no event later than April 16, 2001.

(ii) Comply with all of the following:

(A) The owner or operator of a bleaching system shall comply with the bleach plant provisions of § 63.445 of this subpart as expeditiously as practicable, but in no event later than April 15, 2004.

(B) The owner or operator of a bleaching system shall not increase the

application rate of chlorine or hypochlorite in kg of bleaching agent per megagram of ODP, in the bleaching system above the average daily rates used over the three months prior to June 15, 1998 until the requirements of paragraph (d)(3)(ii)(A) of this section are met and record application rates as specified in § 63.454(c).

(C) Owners and operators shall establish dates, update dates, and report the dates for the milestones specified in § 63.455(b).

(e) Each new source, specified as the total of all HAP emission points for the sources specified in paragraph (c) of this section, shall achieve compliance upon start-up or June 15, 1998, whichever is later, as provided in § 63.6(b) of subpart A of this part.

(f) Each owner or operator of an affected source with affected process equipment shared by more than one type of pulping process, shall comply with the applicable requirement in this subpart that achieves the maximum degree of reduction in HAP emissions.

(g) Each owner or operator of an affected source specified in paragraphs (a) through (c) of this section must comply with the requirements of subpart A—General Provisions of this part, as indicated in table 1 to this subpart.

§ 63.441 Definitions.

All terms used in this subpart shall have the meaning given them in the CAA, in subpart A of this part, and in this section as follows:

Acid condensate storage tank means any storage tank containing cooking acid following the sulfur dioxide gas fortification process.

Black liquor means spent cooking liquor that has been separated from the pulp produced by the kraft, soda, or semi-chemical pulping process.

Bleaching means brightening of pulp by the addition of oxidizing chemicals or reducing chemicals.

Bleaching line means a group of bleaching stages arranged in series such that bleaching of the pulp progresses as the pulp moves from one stage to the next.

Bleaching stage means all process equipment associated with a discrete

step of chemical application and removal in the bleaching process including chemical and steam mixers, bleaching towers, washers, seal (filtrate) tanks, vacuum pumps, and any other equipment serving the same function as those previously listed.

Bleaching system means all process equipment after high-density pulp storage prior to the first application of oxidizing chemicals or reducing chemicals following the pulping system, up to and including the final bleaching stage.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam. A boiler is not considered a thermal oxidizer.

Chip steamer means a vessel used for the purpose of preheating or pretreating wood chips prior to the digester, using flash steam from the digester or live steam.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit of equipment, including but not limited to, a thermal oxidizer, lime kiln, recovery furnace, process heater, or boiler, used for the thermal oxidation of organic hazardous air pollutant vapors.

Decker system means all equipment used to thicken the pulp slurry or reduce its liquid content after the pulp washing system and prior to high-density pulp storage. The decker system includes decker vents, filtrate tanks, associated vacuum pumps, and any other equipment serving the same function as those previously listed.

Digester system means each continuous digester or each batch digester used for the chemical treatment of wood or non-wood fibers. The digester system equipment includes associated flash tank(s), blow tank(s), chip steamer(s) not using fresh steam, blow heat recovery accumulator(s), relief gas condenser(s), prehydrolysis unit(s) preceding the pulp washing system, and any other equipment serving the same function as those previously listed. The digester system includes any of the liquid streams or condensates associated

with batch or continuous digester relief, blow, or flash steam processes.

Emission point means any part of a stationary source that emits hazardous air pollutants regulated under this subpart, including emissions from individual process vents, stacks, open pieces of process equipment, equipment leaks, wastewater and condensate collection and treatment system units, and those emissions that could reasonably be conveyed through a stack, chimney, or duct where such emissions first reach the environment.

Evaporator system means all equipment associated with increasing the solids content and/or concentrating spent cooking liquor from the pulp washing system including pre-evaporators, multi-effect evaporators, concentrators, and vacuum systems, as well as associated condensers, hotwells, and condensate streams, and any other equipment serving the same function as those previously listed.

Flow indicator means any device that indicates gas or liquid flow in an enclosed system.

HAP means a hazardous air pollutant as defined in §63.2 of subpart A of this part.

High volume, low concentration or HVLC collection system means the gas collection and transport system used to convey gases from the HVLC system to a control device.

High volume, low concentration or HVLC system means the collection of equipment including the pulp washing, knotter, screen, decker, and oxygen delignification systems, weak liquor storage tanks, and any other equipment serving the same function as those previously listed.

Knotter system means equipment where knots, oversized material, or pieces of uncooked wood are removed from the pulp slurry after the digester system and prior to the pulp washing system. The knotter system equipment includes the knotter, knot drainer tanks, ancillary tanks, and any other equipment serving the same function as those previously listed.

Kraft pulping means a chemical pulping process that uses a mixture of sodium hydroxide and sodium sulfide as the cooking liquor.

Lime kiln means an enclosed combustion device used to calcine lime mud, which consists primarily of calcium carbonate, into calcium oxide.

Low volume, high concentration or LVHC collection system means the gas collection and transport system used to convey gases from the LVHC system to a control device.

Low volume, high concentration or LVHC system means the collection of equipment including the digester, turpentine recovery, evaporator, steam stripper systems, and any other equipment serving the same function as those previously listed.

Mechanical pulping means a pulping process that only uses mechanical and thermo-mechanical processes to reduce wood to a fibrous mass. The mechanical pulping processes include, but are not limited to, stone groundwood, pressurized groundwood, refiner mechanical, thermal refiner mechanical, thermo-mechanical, and tandem thermo-mechanical.

Non-wood pulping means the production of pulp from fiber sources other than trees. The non-wood fiber sources include, but are not limited to, bagasse, cereal straw, cotton, flax straw, hemp, jute, kenaf, and leaf fibers.

Oven-dried pulp or ODP means a pulp sample at zero percent moisture content by weight. Pulp samples for applicability or compliance determinations for both the pulping and bleaching systems shall be unbleached pulp. For purposes of complying with mass emission limits in this subpart, megagram of ODP shall be measured to represent the amount of pulp entering and processed by the equipment system under the specified mass limit. For equipment that does not process pulp, megagram of ODP shall be measured to represent the amount of pulp that was processed to produce the gas and liquid streams.

Oxygen delignification system means the equipment that uses oxygen to remove lignin from pulp after high-density stock storage and prior to the bleaching system. The oxygen delignification system equipment includes the blow tank, washers, filtrate tanks, any interstage pulp storage tanks, and any other equipment serving the same function as those previously listed.

Primary fuel means the fuel that provides the principal heat input to the combustion device. To be considered primary, the fuel must be able to sustain operation of the combustion device without the addition of other fuels.

Process wastewater treatment system means a collection of equipment, a process, or specific technique that removes or destroys the HAP's in a process wastewater stream. Examples include, but are not limited to, a steam stripping unit, wastewater thermal oxidizer, or biological treatment unit.

Pulp washing system means all equipment used to wash pulp and separate spent cooking chemicals following the digester system and prior to the bleaching system, oxygen delignification system, or paper machine system (at unbleached mills). The pulp washing system equipment includes vacuum drum washers, diffusion washers, rotary pressure washers, horizontal belt filters, intermediate stock chests, and their associated vacuum pumps, filtrate tanks, foam breakers or tanks, and any other equipment serving the same function as those previously listed. The pulp washing system does not include deckers, screens, knotters, stock chests, or pulp storage tanks following the last stage of pulp washing.

Pulping line means a group of equipment arranged in series such that the wood chips are digested and the resulting pulp progresses through a sequence of steps that may include knotting, refining, washing, thickening, blending, storing, oxygen delignification, and any other equipment serving the same function as those previously listed.

Pulping process condensates means any HAP-containing liquid that results from contact of water with organic compounds in the pulping process. Examples of process condensates include digester system condensates, turpentine recovery system condensates, evaporator system condensates, LVHC system condensates, HVLC system condensates, and any other condensates from equipment serving the same function as those previously listed. Liquid streams that are intended for byproduct recovery are not considered process condensate streams.

Pulping system means all process equipment, beginning with the digester system, and up to and including the last piece of pulp conditioning equipment prior to the bleaching system, including treatment with ozone, oxygen, or peroxide before the first application of a chemical bleaching agent intended to brighten pulp. The pulping system includes pulping process condensates and can include multiple pulping lines.

Recovery furnace means an enclosed combustion device where concentrated spent liquor is burned to recover sodium and sulfur, produce steam, and dispose of unwanted dissolved wood components in the liquor.

Screen system means equipment in which oversized particles are removed from the pulp slurry prior to the bleaching or papermaking system washed stock storage.

Secondary fiber pulping means a pulping process that converts a fibrous material, that has previously undergone a manufacturing process, into pulp stock through the addition of water and mechanical energy. The mill then uses that pulp as the raw material in another manufactured product. These mills may also utilize chemical, heat, and mechanical processes to remove ink particles from the fiber stock.

Semi-chemical pulping means a pulping process that combines both chemical and mechanical pulping processes. The semi-chemical pulping process produces intermediate yields ranging from 55 to 90 percent.

Soda pulping means a chemical pulping process that uses sodium hydroxide as the active chemical in the cooking liquor.

Spent liquor means process liquid generated from the separation of cooking liquor from pulp by the pulp washing system containing dissolved organic wood materials and residual cooking compounds.

Steam stripper system means a column (including associated stripper feed tanks, condensers, or heat exchangers) used to remove compounds from wastewater or condensates using steam. The steam stripper system also contains all equipment associated with a methanol rectification process including rectifiers, condensers, decanters, storage

tanks, and any other equipment serving the same function as those previously listed.

Strong liquor storage tanks means all storage tanks containing liquor that has been concentrated in preparation for combustion or oxidation in the recovery process.

Sulfite pulping means a chemical pulping process that uses a mixture of sulfurous acid and bisulfite ion as the cooking liquor.

Temperature monitoring device means a piece of equipment used to monitor temperature and having an accuracy of ± 1.0 percent of the temperature being monitored expressed in degrees Celsius or ± 0.5 degrees Celsius ($^{\circ}\text{C}$), whichever is greater.

Thermal oxidizer means an enclosed device that destroys organic compounds by thermal oxidation.

Turpentine recovery system means all equipment associated with recovering turpentine from digester system gases including condensers, decanters, storage tanks, and any other equipment serving the same function as those previously listed. The turpentine recovery system includes any liquid streams associated with the turpentine recovery process such as turpentine decanter underflow. Liquid streams that are intended for byproduct recovery are not considered turpentine recovery system condensate streams.

Weak liquor storage tank means any storage tank except washer filtrate tanks containing spent liquor recovered from the pulping process and prior to the evaporator system.

§ 63.442 [Reserved]

§ 63.443 Standards for the pulping system at kraft, soda, and semi-chemical processes.

(a) The owner or operator of each pulping system using the kraft process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems, as specified in paragraphs (c) and (d) of this section.

(1) At existing affected sources, the total HAP emissions from the following equipment systems shall be controlled:

(i) Each LVHC system;

(ii) Each knotter or screen system with total HAP mass emission rates greater than or equal to the rates specified in paragraphs (a)(1)(ii)(A) or (a)(1)(ii)(B) of this section or the combined rate specified in paragraph (a)(1)(ii)(C) of this section.

(A) Each knotter system with emissions of 0.05 kilograms or more of total HAP per megagram of ODP (0.1 pounds per ton).

(B) Each screen system with emissions of 0.10 kilograms or more of total HAP per megagram of ODP (0.2 pounds per ton).

(C) Each knotter and screen system with emissions of 0.15 kilograms or more of total HAP per megagram of ODP (0.3 pounds per ton).

(iii) Each pulp washing system;

(iv) Each decker system that:

(A) Uses any process water other than fresh water or paper machine white water; or

(B) Uses any process water with a total HAP concentration greater than 400 parts per million by weight; and

(v) Each oxygen delignification system.

(2) At new affected sources, the total HAP emissions from the equipment systems listed in paragraphs (a)(1)(i), (a)(1)(iii), and (a)(1)(v) of this section and the following equipment systems shall be controlled:

(i) Each knotter system;

(ii) Each screen system;

(iii) Each decker system; and

(iv) Each weak liquor storage tank.

(b) The owner or operator of each pulping system using a semi-chemical or soda process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems as specified in paragraphs (c) and (d) of this section.

(1) At each existing affected sources, the total HAP emissions from each LVHC system shall be controlled.

(2) At each new affected source, the total HAP emissions from each LVHC system and each pulp washing system shall be controlled.

(c) Equipment systems listed in paragraphs (a) and (b) of this section shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (d) of this section.

The enclosures and closed-vent system shall meet the requirements specified in § 63.450.

(d) The control device used to reduce total HAP emissions from each equipment system listed in paragraphs (a) and (b) of this section shall:

(1) Reduce total HAP emissions by 98 percent or more by weight; or

(2) Reduce the total HAP concentration at the outlet of the thermal oxidizer to 20 parts per million or less by volume, corrected to 10 percent oxygen on a dry basis; or

(3) Reduce total HAP emissions using a thermal oxidizer designed and operated at a minimum temperature of 871 °C (1600 °F) and a minimum residence time of 0.75 seconds; or

(4) Reduce total HAP emissions using a boiler, lime kiln, or recovery furnace by introducing the HAP emission stream with the primary fuel or into the flame zone.

(e) Periods of excess emissions reported under § 63.455 shall not be a violation of § 63.443 (c) and (d) provided that the time of excess emissions (excluding periods of startup, shutdown, or malfunction) divided by the total process operating time in a semi-annual reporting period does not exceed the following levels:

(1) One percent for control devices used to reduce the total HAP emissions from the LVHC system; and

(2) Four percent for control devices used to reduce the total HAP emissions from the HVLC system; and

(3) Four percent for control devices used to reduce the total HAP emissions from both the LVHC and HVLC systems.

§ 63.444 Standards for the pulping system at sulfite processes.

(a) The owner or operator of each sulfite process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems as specified in paragraphs (b) and (c) of this section.

(1) At existing sulfite affected sources, the total HAP emissions from the following equipment systems shall be controlled:

(i) Each digester system vent;

(ii) Each evaporator system vent; and

(iii) Each pulp washing system.

(2) At new affected sources, the total HAP emissions from the equipment systems listed in paragraph (a)(1) of this section and the following equipment shall be controlled:

- (i) Each weak liquor storage tank;
- (ii) Each strong liquor storage tank; and
- (iii) Each acid condensate storage tank.

(b) Equipment listed in paragraph (a) of this section shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (c) of this section. The enclosures and closed-vent system shall meet the requirements specified in § 63.450. Emissions from equipment listed in paragraph (a) of this section that is not necessary to be reduced to meet paragraph (c) of this section is not required to be routed to a control device.

(c) The total HAP emissions from both the equipment systems listed in paragraph (a) of this section and the vents, wastewater, and condensate streams from the control device used to reduce HAP emissions, shall be controlled as follows.

(1) Each calcium-based or sodium-based sulfite pulping process shall:

(i) Emit no more than 0.44 kilograms of total HAP or methanol per megagram (0.89 pounds per ton) of ODP; or

(ii) Remove 92 percent or more by weight of the total HAP or methanol.

(2) Each magnesium-based or ammonium-based sulfite pulping process shall:

(i) Emit no more than 1.1 kilograms of total HAP or methanol per megagram (2.2 pounds per ton) of ODP; or

(ii) Remove 87 percent or more by weight of the total HAP or methanol.

§ 63.445 Standards for the bleaching system.

(a) Each bleaching system that does not use any chlorine or chlorinated compounds for bleaching is exempt from the requirements of this section. Owners or operators of the following bleaching systems shall meet all the provisions of this section:

(1) Bleaching systems that use chlorine;

(2) Bleaching systems bleaching pulp from kraft, sulfite, or soda pulping processes that uses any chlorinated compounds; or

(3) Bleaching systems bleaching pulp from mechanical pulping processes using wood or from any process using secondary or non-wood fibers, that use chlorine dioxide.

(b) The equipment at each bleaching stage, of the bleaching systems listed in paragraph (a) of this section, where chlorinated compounds are introduced shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (c) of this section. The enclosures and closed-vent system shall meet the requirements specified in § 63.450.

(c) The control device used to reduce chlorinated HAP emissions (not including chloroform) from the equipment specified in paragraph (b) of this section shall:

(1) Reduce the total chlorinated HAP mass in the vent stream entering the control device by 99 percent or more by weight;

(2) Achieve a treatment device outlet concentration of 10 parts per million or less by volume of total chlorinated HAP; or

(3) Achieve a treatment device outlet mass emission rate of 0.001 kg of total chlorinated HAP mass per megagram (0.002 pounds per ton) of ODP.

(d) The owner or operator of each bleaching system subject to paragraph (a)(2) of this section shall comply with paragraph (d)(1) or (d)(2) of this section to reduce chloroform air emissions to the atmosphere, except the owner or operator of each bleaching system complying with extended compliance under § 63.440(d)(3)(ii) shall comply with paragraph (d)(1) of this section.

(1) Comply with the following applicable effluent limitation guidelines and standards specified in 40 CFR part 430:

(i) Dissolving-grade kraft bleaching systems and lines, 40 CFR 430.14 through 430.17;

(ii) Paper-grade kraft and soda bleaching systems and lines, 40 CFR 430.24(a)(1) and (e), and 40 CFR 430.26 (a) and (c);

(iii) Dissolving-grade sulfite bleaching systems and lines, 40 CFR 430.44 through 430.47; or

(iv) Paper-grade sulfite bleaching systems and lines, 40 CFR 430.54(a) and (c), and 430.56(a) and (c).

(2) Use no hypochlorite or chlorine for bleaching in the bleaching system or line.

§ 63.446 Standards for kraft pulping process condensates.

(a) The requirements of this section apply to owners or operators of kraft processes subject to the requirements of this subpart.

(b) The pulping process condensates from the following equipment systems shall be treated to meet the requirements specified in paragraphs (c), (d), and (e) of this section:

- (1) Each digester system;
- (2) Each turpentine recovery system;
- (3) Each evaporator stage where weak liquor is introduced (feed stages) in the evaporator system;
- (4) Each HVLC collection system; and
- (5) Each LVHC collection system.

(c) One of the following combinations of HAP-containing pulping process condensates generated, produced, or associated with the equipment systems listed in paragraph (b) of this section shall be subject to the requirements of paragraphs (d) and (e) of this section:

(1) All pulping process condensates from the equipment systems specified in paragraphs (b)(1) through (b)(5) of this section.

(2) The combined pulping process condensates from the equipment systems specified in paragraphs (b)(4) and (b)(5) of this section, plus pulping process condensate stream(s) that in total contain at least 65 percent of the total HAP mass from the pulping process condensates from equipment systems listed in paragraphs (b)(1) through (b)(3) of this section.

(3) The pulping process condensates from equipment systems listed in paragraphs (b)(1) through (b)(5) of this section that in total contain a total HAP mass of 3.6 kilograms or more of total HAP per megagram (7.2 pounds per ton) of ODP for mills that do not perform bleaching or 5.5 kilograms or more of total HAP per megagram (11.1 pounds

per ton) of ODP for mills that perform bleaching.

(d) The pulping process condensates from the equipment systems listed in paragraph (b) of this section shall be conveyed in a closed collection system that is designed and operated to meet the requirements specified in paragraphs (d)(1) and (d)(2) of this section.

(1) Each closed collection system shall meet the individual drain system requirements specified in § 63.960, 63.961, and 63.962 of subpart RR of this part, except for closed vent systems and control devices shall be designed and operated in accordance with §§ 63.443(d) and 63.450, instead of in accordance with § 63.693 as specified in § 63.962 (a)(3)(ii), (b)(3)(ii)(A), and (b)(3)(ii)(B)(5)(iii); and

(2) If a condensate tank is used in the closed collection system, the tank shall meet the following requirements:

(i) The fixed roof and all openings (e.g., access hatches, sampling ports, gauge wells) shall be designed and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million above background, and vented into a closed-vent system that meets the requirements in § 63.450 and routed to a control device that meets the requirements in § 63.443(d); and

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the tank contains pulping process condensates or any HAP removed from a pulping process condensate stream except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.

(e) Each pulping process condensate from the equipment systems listed in paragraph (b) of this section shall be treated according to one of the following options:

(1) Recycle the pulping process condensate to an equipment system specified in § 63.443(a) meeting the requirements specified in § 63.443(c) and (d); or

(2) Discharge the pulping process condensate below the liquid surface of a biological treatment system meeting the requirement specified in paragraph (e)(3) of this section; or

(3) Treat the pulping process condensates to reduce or destroy the total

HAP's by at least 92 percent or more by weight; or

(4) At mills that do not perform bleaching, treat the pulping process condensates to remove 3.3 kilograms or more of total HAP per megagram (6.6 pounds per ton) of ODP, or achieve a total HAP concentration of 210 parts per million or less by weight at the outlet of the control device; or

(5) At mills that perform bleaching, treat the pulping process condensates to remove 5.1 kilograms or more of total HAP per megagram (10.2 pounds per ton) of ODP, or achieve a total HAP concentration of 330 parts per million or less by weight at the outlet of the control device.

(f) Each HAP removed from a pulping process condensate stream during treatment and handling under paragraphs (d) or (e) of this section, except for those treated according to paragraph (e)(2) of this section, shall be controlled as specified in § 63.443(c) and (d).

(g) For each steam stripper system used to comply with the requirements specified in paragraph (e)(3) of this section, periods of excess emissions reported under § 63.455 shall not be a violation of paragraphs (d), (e), and (f) of this section provided that the time of excess emissions (including periods of startup, shutdown, or malfunction) divided by the total process operating time in a semi-annual reporting period does not exceed 10 percent.

(h) Each owner or operator of a new or existing affected source subject to the requirements of this section shall evaluate all new or modified pulping process condensates or changes in the annual bleached or non-bleached ODP used to comply with paragraph (i) of this section, to determine if they meet the applicable requirements of this section.

(i) For the purposes of meeting the requirements in paragraphs (c)(2), (e)(4), or (e)(5) of this section at mills producing both bleached and unbleached pulp products, owners and operators may meet a prorated mass standard that is calculated by prorating the applicable mass standards (kilograms of total HAP per megagram of ODP) for bleached and unbleached specified in paragraphs (c)(2), (e)(4), or

(e)(5) of this section by the ratio of annual megagrams of bleached and unbleached ODP.

§ 63.447 Clean condensate alternative.

As an alternative to the requirements specified in § 63.443(a)(1)(ii) through (a)(1)(v) for the control of HAP emissions from pulping systems using the kraft process, an owner or operator must demonstrate to the satisfaction of the Administrator, by meeting all the requirements below, that the total HAP emissions reductions achieved by this clean condensate alternative technology are equal to or greater than the total HAP emission reductions that would have been achieved by compliance with § 63.443(a)(1)(ii) through (a)(1)(v).

(a) For the purposes of this section only the following additional definitions apply.

(1) *Clean condensate alternative affected source* means the total of all HAP emission points in the pulping, bleaching, causticizing, and papermaking systems (exclusive of HAP emissions attributable to additives to paper machines and HAP emission points in the LVHC system).

(2) *Causticizing system* means all equipment associated with converting sodium carbonate into active sodium hydroxide. The equipment includes smelt dissolving tanks, lime mud washers and storage tanks, white and mud liquor clarifiers and storage tanks, slakers, slaker grit washers, lime kilns, green liquor clarifiers and storage tanks, and dreg washers ending with the white liquor storage tanks prior to the digester system, and any other equipment serving the same function as those previously listed.

(3) *Papermaking system* means all equipment used to convert pulp into paper, paperboard, or market pulp, including the stock storage and preparation systems, the paper or paperboard machines, and the paper machine white water system, broke recovery systems, and the systems involved in calendering, drying, on-machine coating, slitting, winding, and cutting.

(b) Each owner or operator shall install and operate a clean condensate alternative technology with a continuous monitoring system to reduce total

HAP emissions by treating and reducing HAP concentrations in the pulping process water used within the clean condensate alternative affected source.

(c) Each owner or operator shall calculate HAP emissions on a kilogram per megagram of ODP basis and measure HAP emissions according to the appropriate procedures contained in §63.457.

(d) Each owner or operator shall determine the baseline HAP emissions for each equipment system and the total of all equipment systems in the clean condensate alternative affected source based on the following:

(1) Process and air pollution control equipment installed and operating on or after December 17, 1993, and

(2) Compliance with the following requirements that affect the level of HAP emissions from the clean condensate alternative affected source:

(i) The pulping process condensates requirements in §63.446;

(ii) The applicable effluent limitation guidelines and standards in 40 CFR part 430, subparts A, B, D, and E; and

(iii) All other applicable requirements of local, State, or Federal agencies or statutes.

(e) Each owner or operator shall determine the following HAP emission reductions from the baseline HAP emissions determined in paragraph (d) of this section for each equipment system and the total of all equipment systems in the clean condensate alternative affected source:

(1) The HAP emission reduction occurring by complying with the requirements of §63.443(a)(1)(ii) through (a)(1)(v); and

(2) The HAP emissions reduction that occurring by complying with the clean condensate alternative technology.

(f) For the purposes of all requirements in this section, each owner or operator may use as an alternative, individual equipment systems (instead of total of all equipment systems) within the clean condensate alternative affected source to determine emissions and reductions to demonstrate equal or greater than the reductions that would have been achieved by compliance with §63.443(a)(1)(ii) through (a)(1)(v).

(g) The initial and updates to the control strategy report specified in

§63.455(b) shall include to the extent possible the following information:

(1) A detailed description of:

(i) The equipment systems and emission points that comprise the clean condensate alternative affected source;

(ii) The air pollution control technologies that would be used to meet the requirements of §63.443(a)(1)(ii) through (a)(1)(v);

(iii) The clean condensate alternative technology to be used.

(2) Estimates and basis for the estimates of total HAP emissions and emissions reductions to fulfill the requirements paragraphs (d), (e), and (f) of this section.

(h) Each owner or operator shall report to the Administrator by the applicable compliance date specified in §63.440(d) or (e) the rationale, calculations, test procedures, and data documentation used to demonstrate compliance with all the requirements of this section.

§§ 63.448–63.449 [Reserved]

§63.450 Standards for enclosures and closed-vent systems.

(a) Each enclosure and closed-vent system specified in §§ 63.443(c), 63.444(b), and 63.445(b) for capturing and transporting vent streams that contain HAP shall meet the requirements specified in paragraphs (b) through (d) of this section.

(b) Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures specified §63.457(e). Each enclosure or hood opening closed during the initial performance test specified in §63.457(a) shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.

(c) Each component of the closed-vent system used to comply with §§ 63.443(c), 63.444(b), and 63.445(b) that is operated at positive pressure and located prior to a control device shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts

per million by volume above background, as measured by the procedures specified in § 63.457(d).

(d) Each bypass line in the closed-vent system that could divert vent streams containing HAP to the atmosphere without meeting the emission limitations in §§ 63.443, 63.444, or 63.445 shall comply with either of the following requirements:

(1) On each bypass line, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications a flow indicator that provides a record of the presence of gas stream flow in the bypass line at least once every 15 minutes. The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line; or

(2) For bypass line valves that are not computer controlled, the owner or operator shall maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal.

§§ 63.451–63.452 [Reserved]

§ 63.453 Monitoring requirements.

(a) Each owner or operator subject to the standards specified in §§ 63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or § 63.450(d), shall install, calibrate, certify, operate, and maintain according to the manufacturer's specifications, a continuous monitoring system (CMS, as defined in § 63.2 of this part) as specified in paragraphs (b) through (m) of this section, except as allowed in paragraph (m) of this section. The CMS shall include a continuous recorder.

(b) A CMS shall be operated to measure the temperature in the firebox or in the ductwork immediately downstream of the firebox and before any substantial heat exchange occurs for each thermal oxidizer used to comply with the requirements of § 63.443(d)(1) through (d)(3). Owners and operators complying with the requirements in § 63.443(d)(2) or (d)(3) shall monitor the parameter specified and for the temperature and concentration limits specified.

(c) A CMS shall be operated to measure the following parameters for each gas scrubber used to comply with the bleaching system requirements of § 63.445(c) or the sulfite pulping system requirements of § 63.444(c).

(1) The pH or the oxidation/reduction potential of the gas scrubber effluent;

(2) The gas scrubber vent gas inlet flow rate; and

(3) The gas scrubber liquid influent flow rate.

(d) As an option to the requirements specified in paragraph (c) of this section, a CMS shall be operated to measure the chlorine outlet concentration of each gas scrubber used to comply with the bleaching system outlet concentration requirement specified in § 63.445(c)(2).

(e) The owner or operator of a bleaching system complying with 40 CFR 430.24, shall monitor the chlorine and hypochlorite application rates, in kg of bleaching agent per megagram of ODP, of the bleaching system during the extended compliance period specified in § 63.440(d)(3).

(f) A CMS shall be operated to measure the gas scrubber parameters specified in paragraphs (c)(1) through (c)(3) of this section or those site specific parameters determined according to the procedures specified in paragraph (n) of this section to comply with the sulfite pulping system requirements specified in § 63.444(c).

(g) A CMS shall be operated to measure the following parameters for each steam stripper used to comply with the treatment requirements in § 63.446(e)(3), (4), or (5):

(1) The process wastewater feed rate;

(2) The steam feed rate; and

(3) The process wastewater column feed temperature.

(h) As an option to the requirements specified in paragraph (g) of this section, a CMS shall be operated to measure the methanol outlet concentration to comply with the steam stripper outlet concentration requirement specified in § 63.446 (e)(4) or (e)(5).

(i) A CMS shall be operated to measure the appropriate parameters determined according to the procedures

specified in paragraph (n) of this section to comply with the condensate applicability requirements specified in § 63.446(c).

(j) Each owner or operator using a biological treatment system to comply with § 63.446(e)(2) shall perform the following monitoring procedures.

(1) On a daily basis, monitor the following parameters for each biological treatment unit:

- (i) Composite daily sample of outlet soluble BOD₅ concentration to monitor for maximum daily and maximum monthly average;
- (ii) Mixed liquor volatile suspended solids;
- (iii) Horsepower of aerator unit(s);
- (iv) Inlet liquid flow; and
- (v) Liquid temperature.

(2) Obtain daily inlet and outlet liquid grab samples from each biological treatment unit to have HAP data available to perform quarterly percent reduction tests specified in paragraph (j)(2)(ii) of this section and the compliance percent reduction tests specified in paragraph (p)(1)(i) of this section. Perform the following procedures with the liquid samples:

(i) Store the samples for 5 days as specified in § 63.457(n). The 5 day storage requirement is required since the soluble BOD₅ test requires 5 days to obtain results. If the results of the soluble BOD₅ test are outside of the range established during the initial performance test, then the archive sample shall be used to perform the percent reduction test specified in § 63.457(l).

(ii) Perform the percent reduction test procedures specified in § 63.457(l) within 45 days after the beginning of each quarter as follows.

(A) The percent reduction test performed in the first quarter (annually) shall be performed for total HAP and the percent reduction obtained from the test shall be at least as great as the total HAP reduction specified in § 63.446(e)(2).

(B) The remaining quarterly percent reduction tests shall be performed for methanol and the percent reduction obtained from the test shall be at least as great as the methanol reduction determined in the previous first-quarter test specified in paragraph (j)(2)(ii)(A) of this section.

(C) The parameter values used to calculate the percent reductions required in paragraphs (j)(2)(ii)(A) and (j)(2)(ii)(B) of this section shall be parameter values measured and samples taken in paragraph (j)(1) of this section.

(k) Each enclosure and closed-vent system used to comply with § 63.450(a) shall comply with the requirements specified in paragraphs (k)(1) through (k)(6) of this section.

(1) For each enclosure opening, a visual inspection of the closure mechanism specified in § 63.450(b) shall be performed at least once every 30 days to ensure the opening is maintained in the closed position and sealed.

(2) Each closed-vent system required by § 63.450(a) shall be visually inspected every 30 days and at other times as requested by the Administrator. The visual inspection shall include inspection of ductwork, piping, enclosures, and connections to covers for visible evidence of defects.

(3) For positive pressure closed-vent systems or portions of closed-vent systems, demonstrate no detectable leaks as specified in § 63.450(c) measured initially and annually by the procedures in § 63.457(d).

(4) Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in § 63.457(e).

(5) The valve or closure mechanism specified in § 63.450(d)(2) shall be inspected at least once every 30 days to ensure that the valve is maintained in the closed position and the emission point gas stream is not diverted through the bypass line.

(6) If an inspection required by paragraphs (k)(1) through (k)(5) of this section identifies visible defects in ductwork, piping, enclosures or connections to covers required by § 63.450, or if an instrument reading of 500 parts per million by volume or greater above background is measured, or if enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken as soon as practicable.

(i) A first effort to repair or correct the closed-vent system shall be made as soon as practicable but no later than

5 calendar days after the problem is identified.

(ii) The repair or corrective action shall be completed no later than 15 calendar days after the problem is identified.

(l) Each pulping process condensate closed collection system used to comply with § 63.446(d) shall be visually inspected every 30 days and shall comply with the inspection and monitoring requirements specified in § 63.964 of subpart RR of this part, except for the closed-vent system and control device inspection and monitoring requirements specified in § 63.964(a)(2) of subpart RR of this part, the closed-vent system and the control device shall meet the requirements specified in paragraphs (a) and (k) of this section.

(m) Each owner or operator using a control device, technique or an alternative parameter other than those specified in paragraphs (b) through (l) of this section shall install a CMS and establish appropriate operating parameters to be monitored that demonstrate, to the Administrator's satisfaction, continuous compliance with the applicable control requirements.

(n) To establish or reestablish, the value for each operating parameter required to be monitored under paragraphs (b) through (j), (l), and (m) of this section or to establish appropriate parameters for paragraphs (f), (i), and (m) of this section, each owner or operator shall use the following procedures:

(1) During the initial performance test required in § 63.457(a) or any subsequent performance test, continuously record the operating parameter;

(2) Determinations shall be based on the control performance and parameter data monitored during the performance test, supplemented if necessary by engineering assessments and the manufacturer's recommendations;

(3) The owner or operator shall provide for the Administrator's approval the rationale for selecting the monitoring parameters necessary to comply with paragraphs (f), (i), and (m) of this section; and

(4) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency, and averaging time. Include all data and calculations used

to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the applicable emission standard.

(o) Each owner or operator of a control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum or maximum (as appropriate) operating parameter value or procedure required to be monitored under paragraphs (a) through (n) of this section and established under this subpart. Except as provided in paragraph (p) of this section, § 63.443(e), or § 63.446(g), operation of the control device below minimum operating parameter values or above maximum operating parameter values established under this subpart or failure to perform procedures required by this subpart shall constitute a violation of the applicable emission standard of this subpart and be reported as a period of excess emissions.

(p) Each owner or operator of a biological treatment system complying with paragraph (j) of this section shall perform all the following requirements when the monitoring parameters specified in paragraphs (j)(1)(i) through (j)(1)(iii) of this section are below minimum operating parameter values or above maximum operating parameter values established in paragraph (n) of this section.

(1) The following shall occur and be recorded as soon as practical:

(i) Determine compliance with § 63.446(e)(2) using the percent reduction test procedures specified in § 63.457(l) and the monitoring data specified in paragraph (j)(1) of this section that coincide with the time period of the parameter excursion;

(ii) Steps shall be taken to repair or adjust the operation of the process to end the parameter excursion period; and

(iii) Steps shall be taken to minimize total HAP emissions to the atmosphere during the parameter excursion period.

(2) A parameter excursion is not a violation of the applicable emission standard if the percent reduction test specified in paragraph (p)(1)(i) of this section demonstrates compliance with § 63.446(e)(2), and no maintenance or

changes have been made to the process or control device after the beginning of a parameter excursion that would influence the results of the determination.

§ 63.454 Recordkeeping requirements.

(a) The owner or operator of each affected source subject to the requirements of this subpart shall comply with the recordkeeping requirements of § 63.10 of subpart A of this part, as shown in table 1, and the requirements specified in paragraphs (b) through (d) of this section for the monitoring parameters specified in § 63.453.

(b) For each applicable enclosure opening, closed-vent system, and closed collection system, the owner or operator shall prepare and maintain a site-specific inspection plan including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:

- (1) Date of inspection;
- (2) The equipment type and identification;
- (3) Results of negative pressure tests for enclosures;
- (4) Results of leak detection tests;
- (5) The nature of the defect or leak and the method of detection (i.e., visual inspection or instrument detection);
- (6) The date the defect or leak was detected and the date of each attempt to repair the defect or leak;
- (7) Repair methods applied in each attempt to repair the defect or leak;
- (8) The reason for the delay if the defect or leak is not repaired within 15 days after discovery;
- (9) The expected date of successful repair of the defect or leak if the repair is not completed within 15 days;
- (10) The date of successful repair of the defect or leak;
- (11) The position and duration of opening of bypass line valves and the condition of any valve seals; and
- (12) The duration of the use of bypass valves on computer controlled valves.

(c) The owner or operator of a bleaching system complying with § 63.440(d)(3)(ii)(B) shall record the daily average chlorine and hypochlorite application rates, in kg of bleaching agent per megagram of ODP, of the

bleaching system until the requirements specified in § 63.440(d)(3)(ii)(A) are met.

(d) The owner or operator shall record the CMS parameters specified in § 63.453 and meet the requirements specified in paragraph (a) of this section for any new affected process equipment or pulping process condensate stream that becomes subject to the standards in this subpart due to a process change or modification.

§ 63.455 Reporting requirements.

(a) Each owner or operator of a source subject to this subpart shall comply with the reporting requirements of subpart A of this part as specified in table 1 and all the following requirements in this section. The initial notification report specified under § 63.9(b)(2) of subpart A of this part shall be submitted by April 15, 1999.

(b) Each owner or operator of a kraft pulping system specified in § 63.440(d)(1) or a bleaching system specified in § 63.440(d)(3)(ii) shall submit, with the initial notification report specified under § 63.9(b)(2) of subpart A of this part and paragraph (a) of this section and update every two years thereafter, a non-binding control strategy report containing, at a minimum, the information specified in paragraphs (b)(1) through (b)(3) of this section in addition to the information required in § 63.9(b)(2) of subpart A of this part.

(1) A description of the emission controls or process modifications selected for compliance with the control requirements in this standard.

(2) A compliance schedule, including the dates by which each step toward compliance will be reached for each emission point or sets of emission points. At a minimum, the list of dates shall include:

(i) The date by which the major study(s) for determining the compliance strategy will be completed;

(ii) The date by which contracts for emission controls or process modifications will be awarded, or the date by which orders will be issued for the purchase of major components to accomplish emission controls or process changes;

(iii) The date by which on-site construction, installation of emission control equipment, or a process change is to be initiated;

(iv) The date by which on-site construction, installation of emissions control equipment, or a process change is to be completed;

(v) The date by which final compliance is to be achieved;

(vi) For compliance with paragraph §63.440(d)(3)(ii), the tentative dates by which compliance with effluent limitation guidelines and standards intermediate pollutant load effluent reductions and as available, all the dates for the best available technology's milestones reported in the National Pollutant Discharge Elimination System authorized under section 402 of the Clean Water Act and for the best professional milestones in the Voluntary Advanced Technology Incentives Program under 40 CFR 430.24 (b)(2); and

(vii) The date by which the final compliance tests will be performed.

(3) Until compliance is achieved, revisions or updates shall be made to the control strategy report required by paragraph (b) of this section indicating the progress made towards completing the installation of the emission controls or process modifications during the 2-year period.

(c) The owner or operator of each bleaching system complying with §63.440(d)(3)(ii)(B) shall certify in the report specified under §63.10(e)(3) of subpart A of this part that the daily application rates of chlorine and hypochlorite for that bleaching system have not increased as specified in §63.440(d)(3)(ii)(B) until the requirements of §63.440(d)(3)(ii)(A) are met.

(d) The owner or operator shall meet the requirements specified in paragraph (a) of this section upon startup of any new affected process equipment or pulping process condensate stream that becomes subject to the standards of this subpart due to a process change or modification.

§ 63.456 [Reserved]

§ 63.457 Test methods and procedures.

(a) *Initial performance test.* An initial performance test is required for all emission sources subject to the limita-

tions in §§ 63.443, 63.444, 63.445, 63.446, and 63.447, except those controlled by a combustion device that is designed and operated as specified in § 63.443(d)(3) or (d)(4).

(b) *Vent sampling port locations and gas stream properties.* For purposes of selecting vent sampling port locations and determining vent gas stream properties, required in §§ 63.443, 63.444, 63.445, and 63.447, each owner or operator shall comply with the applicable procedures in paragraphs (b)(1) through (b)(6) of this section.

(1) Method 1 or 1A of part 60, appendix A, as appropriate, shall be used for selection of the sampling site as follows:

(i) To sample for vent gas concentrations and volumetric flow rates, the sampling site shall be located prior to dilution of the vent gas stream and prior to release to the atmosphere;

(ii) For determining compliance with percent reduction requirements, sampling sites shall be located prior to the inlet of the control device and at the outlet of the control device; measurements shall be performed simultaneously at the two sampling sites; and

(iii) For determining compliance with concentration limits or mass emission rate limits, the sampling site shall be located at the outlet of the control device.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter (4.0 inches) in diameter.

(3) The vent gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

(4) The moisture content of the vent gas shall be measured using Method 4 of part 60, appendix A.

(5) To determine vent gas concentrations, the owner or operator shall collect a minimum of three samples that are representative of normal conditions and average the resulting pollutant concentrations using the following procedures.

(i) Method 308 in Appendix A of this part shall be used to determine the methanol concentration.

(ii) Except for the modifications specified in paragraphs (b)(5)(ii)(A) through (b)(5)(ii)(K) of this section, Method 26A of part 60, appendix A shall

be used to determine chlorine concentration in the vent stream.

(A) *Probe/Sampling Line.* A separate probe is not required. The sampling line shall be an appropriate length of 0.64 cm (0.25 in) OD Teflon tubing. The sample inlet end of the sampling line shall be inserted into the stack in such a way as to not entrain liquid condensation from the vent gases. The other end shall be connected to the impingers. The length of the tubing may vary from one sampling site to another, but shall be as short as possible in each situation. If sampling is conducted in sunlight, opaque tubing shall be used. Alternatively, if transparent tubing is used, it shall be covered with opaque tape.

(B) *Impinger Train.* Three 30 milliliter (ml) capacity midget impingers shall be connected in series to the sampling line. The impingers shall have regular tapered stems. Silica gel shall be placed in the third impinger as a desiccant. All impinger train connectors shall be glass and/or Teflon®.

(C) *Critical Orifice.* The critical orifice shall have a flow rate of 200 to 250 ml/min and shall be followed by a vacuum pump capable of providing a vacuum of 640 millimeters of mercury (mm Hg). A 45 millimeter diameter in-line Teflon® 0.8 micrometer filter shall follow the impingers to project the critical orifice and vacuum pump.

(D) The following are necessary for the analysis apparatus:

- (1) Wash bottle filled with deionized water;
- (2) 25 or 50 ml graduated burette and stand;
- (3) Magnetic stirring apparatus and stir bar;
- (4) Calibrated pH Meter;
- (5) 150-250 ml beaker or flask; and
- (6) A 5 ml pipette.

(E) The procedures listed in paragraphs (b)(5)(ii)(E)(1) through (b)(5)(ii)(E)(7) of this section shall be used to prepare the reagents.

(1) To prepare the 1 molarity (M) potassium dihydrogen phosphate solution, dissolve 13.61 grams (g) of potassium dihydrogen phosphate in water and dilute to 100 ml.

(2) To prepare the 1 M sodium hydroxide solution (NaOH), dissolve 4.0 g of sodium hydroxide in water and dilute to 100 ml.

(3) To prepare the buffered 2 percent potassium iodide solution, dissolve 20 g of potassium iodide in 900 ml water. Add 50 ml of the 1 M potassium dihydrogen phosphate solution and 30 ml of the 1 M sodium hydroxide solution. While stirring solution, measure the pH of solution electrometrically and add the 1 M sodium hydroxide solution to bring pH to between 6.95 and 7.05.

(4) To prepare the 0.1 normality (N) sodium thiosulfate solution, dissolve 25 g of sodium thiosulfate, pentahydrate, in 800 ml of freshly boiled and cooled distilled water in a 1-liter volumetric flask. Dilute to volume. To prepare the 0.01 N sodium thiosulfate solution, add 10.0 ml standardized 0.1 N sodium thiosulfate solution to a 100 ml volumetric flask, and dilute to volume with water.

(5) To standardize the 0.1 N sodium thiosulfate solution, dissolve 3.249 g of anhydrous potassium bi-iodate, primary standard quality, or 3.567 g potassium iodate dried at 103 \pm 2 degrees Centigrade for 1 hour, in distilled water and dilute to 1000 ml to yield a 0.1000 N solution. Store in a glass-stoppered bottle. To 80 ml distilled water, add, with constant stirring, 1 ml concentrated sulfuric acid, 10.00 ml 0.1000 N anhydrous potassium bi-iodate, and 1 g potassium iodide. Titrate immediately with 0.1 N sodium thiosulfate titrant until the yellow color of the liberated iodine is almost discharged. Add 1 ml starch indicator solution and continue titrating until the blue color disappears. The normality of the sodium thiosulfate solution is inversely proportional to the ml of sodium thiosulfate solution consumed:

$$\text{Normality of SodiumThiosulfate} = \frac{1}{\text{ml Sodium Thiosulfate Consumed}}$$

(6) To prepare the starch indicator solution, add a small amount of cold water to 5 g starch and grind in a mortar to obtain a thin paste. Pour paste into 1 L of boiling distilled water, stir, and let settle overnight. Use clear supernate for starch indicator solution.

(7) To prepare the 10 percent sulfuric acid solution, add 10 ml of concentrated sulfuric acid to 80 ml water in an 100 ml volumetric flask. Dilute to volume.

(F) The procedures specified in paragraphs (b)(5)(ii)(F)(1) through (b)(5)(ii)(F)(5) of this section shall be used to perform the sampling.

(1) *Preparation of Collection Train.* Measure 20 ml buffered potassium iodide solution into each of the first two impingers and connect probe, impingers, filter, critical orifice, and pump. The sampling line and the impingers shall be shielded from sunlight.

(2) *Leak and Flow Check Procedure.* Plug sampling line inlet tip and turn on pump. If a flow of bubbles is visible in either of the liquid impingers, tighten fittings and adjust connections and impingers. A leakage rate not in excess of 2 percent of the sampling rate is acceptable. Carefully remove the plug from the end of the probe. Check the flow rate at the probe inlet with a bubble tube flow meter. The flow should be comparable or slightly less than the flow rate of the critical orifice with the impingers off-line. Record the flow and turn off the pump.

(3) *Sample Collection.* Insert the sampling line into the stack and secure it with the tip slightly lower than the port height. Start the pump, recording the time. End the sampling after 60 minutes, or after yellow color is observed in the second in-line impinger. Record time and remove the tubing from the vent. Recheck flow rate at sampling line inlet and turn off pump. If the flow rate has changed significantly, redo sampling with fresh capture solution. A slight variation (less than 5 percent) in flow may be averaged. With the inlet end of the line elevated above the impingers, add about 5 ml water into the inlet tip to rinse the line into the first impinger.

(4) *Sample Analysis.* Fill the burette with 0.01 N sodium thiosulfate solution

to the zero mark. Combine the contents of the impingers in the beaker or flask. Stir the solution and titrate with thiosulfate until the solution is colorless. Record the volume of the first endpoint (TN, ml). Add 5 ml of the 10 percent sulfuric acid solution, and continue the titration until the contents of the flask are again colorless. Record the total volume of titrant required to go through the first and to the second endpoint (TA, ml). If the volume of neutral titer is less than 0.5 ml, repeat the testing for a longer period of time. It is important that sufficient lighting be present to clearly see the endpoints, which are determined when the solution turns from pale yellow to colorless. A lighted stirring plate and a white background are useful for this purpose.

(5) *Interferences.* Known interfering agents of this method are sulfur dioxide and hydrogen peroxide. Sulfur dioxide, which is used to reduce oxidant residuals in some bleaching systems, reduces formed iodine to iodide in the capture solution. It is therefore a negative interference for chlorine, and in some cases could result in erroneous negative chlorine concentrations. Any agent capable of reducing iodine to iodide could interfere in this manner. A chromium trioxide impregnated filter will capture sulfur dioxide and pass chlorine and chlorine dioxide. Hydrogen peroxide, which is commonly used as a bleaching agent in modern bleaching systems, reacts with iodide to form iodine and thus can cause a positive interference in the chlorine measurement. Due to the chemistry involved, the precision of the chlorine analysis will decrease as the ratio of chlorine dioxide to chlorine increases. Slightly negative calculated concentrations of chlorine may occur when sampling a vent gas with high concentrations of chlorine dioxide and very low concentrations of chlorine.

(G) The following calculation shall be performed to determine the corrected sampling flow rate:

$$S_C = S_U \left(\frac{BP - PW}{760} \right) \left(\frac{293}{273 + t} \right)$$

Where:

S_C =Corrected (dry standard) sampling flow rate, liters per minute;

S_U =Uncorrected sampling flow rate, L/min;

BP =Barometric pressure at time of sampling;

PW =Saturated partial pressure of water vapor, mm Hg at temperature; and

t =Ambient temperature, °C.

(H) The following calculation shall be performed to determine the moles of chlorine in the sample:

$$\text{Cl}_2 \text{ Moles} = 1/8000(5 T_N - T_A) \times N_{\text{Thio}}$$

Where:

T_N =Volume neutral titer, ml;

T_A =Volume acid titer (total), ml; and

N_{Thio} =Normality of sodium thiosulfate titrant.

(I) The following calculation shall be performed to determine the concentration of chlorine in the sample:

$$\text{Cl}_2 \text{ ppmv} = \frac{3005(5 T_N - T_A) \times N_{\text{Thio}}}{S_C \times t_S}$$

Where:

S_C =Corrected (dry standard) sampling flow rate, liters per minute;

t_S =Time sampled, minutes;

T_N =Volume neutral titer, ml;

T_A =Volume acid titer (total), ml; and

N_{Thio} =Normality of sodium thiosulfate titrant.

(J) The following calculation shall be performed to determine the moles of chlorine dioxide in the sample:

$$\text{ClO}_2 \text{ Moles} = 1/4000(T_A - T_N) \times N_{\text{Thio}}$$

Where:

T_A =Volume acid titer (total), ml;

T_N =Volume neutral titer, ml; and

N_{Thio} =Normality of sodium thiosulfate titrant.

(K) The following calculation shall be performed to determine the concentration of chlorine dioxide in the sample:

$$\text{ClO}_2 \text{ ppmv} = \frac{6010(T_A - T_N) \times N_{\text{Thio}}}{S_C \times t_S}$$

Where:

S_C =Corrected (dry standard) sampling flow rate, liters per minute;

t_S =Time sampled, minutes;

T_A =Volume acid titer (total), ml;

T_N =Volume neutral titer, ml; and

N_{Thio} =Normality of sodium thiosulfate titrant.

(iii) Any other method that measures the total HAP or methanol concentration that has been demonstrated to the Administrator's satisfaction.

(6) The minimum sampling time for each of the three runs per method shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(c) *Liquid sampling locations and properties.* For purposes of selecting liquid sampling locations and for determining properties of liquid streams such as wastewaters, process waters, and condensates required in §§ 63.444, 63.446, and 63.447, the owner or operator shall comply with the following procedures:

(1) Samples shall be collected using the sampling procedures specified in Method 305 of part 60, appendix A;

(i) Where feasible, samples shall be taken from an enclosed pipe prior to the liquid stream being exposed to the atmosphere; and

(ii) When sampling from an enclosed pipe is not feasible, samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of HAP compounds prior to sampling.

(2) The volumetric flow rate of the entering and exiting liquid streams shall be determined using the inlet and outlet flow meters or other methods demonstrated to the Administrator's satisfaction. The volumetric flow rate measurements to determine actual mass removal shall be taken at the same time as the concentration measurements;

(3) To determine liquid stream total HAP or methanol concentrations, the owner or operator shall collect a minimum of three samples that are representative of normal conditions and average the resulting pollutant concentrations using one of the following:

(i) Method 305 in Appendix A of this part, adjusted using the following equation:

$$\bar{C} = \sum_{i=1}^n C_i / fm_i$$

Where:

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\bar{C} =Pollutant concentration for the liquid stream, parts per million by weight.

C_i =Measured concentration of pollutant i in the liquid stream sample determined using Method 305, parts per million by weight.

fm_i =Pollutant-specific constant that adjusts concentration measured by Method 305 to actual liquid concentration; the fm for methanol is 0.85. Additional pollutant fm values can be found in table 34, subpart G of this part.

n =Number of individual pollutants, i , summed to calculate total HAP.

(ii) Any other method that measures total HAP concentration that has been demonstrated to the Administrator's satisfaction.

(4) To determine soluble BOD₅ in the effluent stream from a biological treatment unit used to comply with §§63.446(e)(2) and 63.453(j), the owner or operator shall use Method 405.1, of part 136, with the following modifications:

(i) Filter the sample through the filter paper, into Erlenmeyer flask by applying a vacuum to the flask sidearm. Minimize the time for which vacuum is applied to prevent stripping of volatile organics from the sample. Replace filter paper as often as needed in order to maintain filter times of less than approximately 30 seconds per filter paper. No rinsing of sample container or filter bowl into the Erlenmeyer flask is allowed.

(ii) Perform Method 405.1 on the filtrate obtained in paragraph (c)(4) of this section. Dilution water shall be seeded with 1 milliliter of final effluent per liter of dilution water. Dilution ratios may require adjustment to reflect the lower oxygen demand of the filtered sample in comparison to the total BOD₅. Three BOD bottles and different dilutions shall be used for each sample.

(d) *Detectable leak procedures.* To measure detectable leaks for closed-vent systems as specified in §63.450 or for pulping process wastewater collection systems as specified in §63.446(d)(2)(i), the owner or operator shall comply with the following:

(1) Method 21, of part 60, appendix A; and

(2) The instrument specified in Method 21 shall be calibrated before use according to the procedures specified in Method 21 on each day that leak

checks are performed. The following calibration gases shall be used:

(i) Zero air (less than 10 parts per million by volume of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 parts per million by volume methane or n-hexane.

(e) *Negative pressure procedures.* To demonstrate negative pressure at process equipment enclosure openings as specified in §63.450(b), the owner or operator shall use one of the following procedures:

(1) An anemometer to demonstrate flow into the enclosure opening;

(2) Measure the static pressure across the opening;

(3) Smoke tubes to demonstrate flow into the enclosure opening; or

(4) Any other industrial ventilation test method demonstrated to the Administrator's satisfaction.

(f) *HAP concentration measurements.* For purposes of complying with the requirements in §§63.443, 63.444, and 63.447, the owner or operator shall measure the total HAP concentration as one of the following:

(1) As the sum of all individual HAP's; or

(2) As methanol.

(g) *Condensate HAP concentration measurement.* For purposes of complying with the kraft pulping condensate requirements in §63.446, the owner or operator shall measure the total HAP concentration as methanol except for the purposes of complying with the initial performance test specified in §63.457(a) for §63.446(e)(2) and as specified in §63.453(j)(2)(ii).

(h) *Bleaching HAP concentration measurement.* For purposes of complying with the bleaching system requirements in §63.445, the owner or operator shall measure the total HAP concentration as the sum of all individual chlorinated HAP's or as chlorine.

(i) *Vent gas stream calculations.* To demonstrate compliance with the mass emission rate, mass emission rate per megagram of ODP, and percent reduction requirements for vent gas streams specified in §§63.443, 63.444, 63.445, and 63.447, the owner or operator shall use the following:

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(1) The total HAP mass emission rate shall be calculated using the following equation:

$$E = K_2 \left[\sum_{j=1}^n C_j M_j \right] Q_s$$

Where:

E=Mass emission rate of total HAP from the sampled vent, kilograms per hour.

K₂=Constant, 2.494×10⁻⁶ (parts per million by volume)⁻¹ (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

C_j=Concentration on a dry basis of pollutant j in parts per million by volume as measured by the test methods specified in paragraph (b) of this section.

M_j=Molecular weight of pollutant j, gram/gram-mole.

Q_s=Vent gas stream flow rate (dry standard cubic meter per minute) at a temperature of 20 °C as indicated in paragraph (b) of this section.

n=Number of individual pollutants, i, summed to calculate total HAP.

(2) The total HAP mass emission rate per megagram of ODP shall be calculated using the following equation:

$$F = \frac{E}{P}$$

Where:

F=Mass emission rate of total HAP from the sampled vent, in kilograms per megagram of ODP.

E=Mass emission rate of total HAP from the sampled vent, in kilograms per hour determined as specified in paragraph (i)(1) of this section.

P=The production rate of pulp during the sampling period, in megagrams of ODP per hour.

(3) The total HAP percent reduction shall be calculated using the following equation:

$$R = \frac{E_i - E_o}{E_i} (100)$$

Where:

R=Efficiency of control device, percent.

E_i=Inlet mass emission rate of total HAP from the sampled vent, in kilograms of pollutant per hour, determined as specified in paragraph (i)(1) of this section.

E_o=Outlet mass emission rate of total HAP from the sampled vent, in kilograms of

pollutant per hour, determined as specified in paragraph (i)(1) of this section.

(j) *Liquid stream calculations.* To demonstrate compliance with the mass flow rate, mass per megagram of ODP, and percent reduction requirements for liquid streams specified in §63.446, the owner or operator shall use the following:

(1) The mass flow rates of total HAP or methanol entering and exiting the treatment process shall be calculated using the following equations:

$$E_b = \frac{K}{n \times 10^6} \left(\sum_{i=1}^n V_{bi} C_{bi} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left(\sum_{i=1}^n V_{ai} C_{ai} \right)$$

Where:

E_b=Mass flow rate of total HAP or methanol in the liquid stream entering the treatment process, kilograms per hour.

E_a=Mass flow rate of total HAP or methanol in the liquid exiting the treatment process, kilograms per hour.

K=Density of the liquid stream, kilograms per cubic meter.

V_{bi}=Volumetric flow rate of liquid stream entering the treatment process during each run i, cubic meters per hour, determined as specified in paragraph (c) of this section.

V_{ai}=Volumetric flow rate of liquid stream exiting the treatment process during each run i, cubic meters per hour, determined as specified in paragraph (c) of this section.

C_{bi}=Concentration of total HAP or methanol in the stream entering the treatment process during each run i, parts per million by weight, determined as specified in paragraph (c) of this section.

C_{ai}=Concentration of total HAP or methanol in the stream exiting the treatment process during each run i, parts per million by weight, determined as specified in paragraph (c) of this section.

n=Number of runs.

(2) The mass of total HAP or methanol per megagram ODP shall be calculated using the following equation:

$$F = \frac{E_a}{P}$$

Where:

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F=Mass loading of total HAP or methanol in the sample, in kilograms per megagram of ODP.

E_a=Mass flow rate of total HAP or methanol in the wastewater stream in kilograms per hour as determined using the procedures in paragraph (j)(1) of this section.

P=The production rate of pulp during the sampling period in megagrams of ODP per hour.

(3) The percent reduction of total HAP across the applicable treatment process shall be calculated using the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R=Control efficiency of the treatment process, percent.

E_b=Mass flow rate of total HAP in the stream entering the treatment process, kilograms per hour, as determined in paragraph (j)(1) of this section.

E_a=Mass flow rate of total HAP in the stream exiting the treatment process, kilograms per hour, as determined in paragraph (j)(1) of this section.

(4) Compounds that meet the requirements specified in paragraphs (j)(4)(i) or (4)(ii) of this section are not required to be included in the mass flow rate, mass per megagram of ODP, or the mass percent reduction determinations.

(i) Compounds with concentrations at the point of determination that are below 1 part per million by weight; or

(ii) Compounds with concentrations at the point of determination that are below the lower detection limit where the lower detection limit is greater than 1 part per million by weight.

(k) *Oxygen concentration correction procedures.* To demonstrate compliance with the total HAP concentration limit of 20 ppmv in § 63.443(d)(2), the concentration measured using the methods specified in paragraph (b)(5) of this section shall be corrected to 10 percent oxygen using the following procedures:

(1) The emission rate correction factor and excess air integrated sampling and analysis procedures of Methods 3A or 3B of part 60, appendix A shall be used to determine the oxygen concentration. The samples shall be taken at the same time that the HAP samples are taken.

(2) The concentration corrected to 10 percent oxygen shall be computed using the following equation:

$$C_c = C_m \left(\frac{10.9}{20.9 - \%O_{2d}} \right)$$

Where:

C_c=Concentration of total HAP corrected to 10 percent oxygen, dry basis, parts per million by volume.

C_m=Concentration of total HAP dry basis, parts per million by volume, as specified in paragraph (b) of this section.

%O_{2d}=Concentration of oxygen, dry basis, percent by volume.

(l) *Biological treatment system percent reduction calculation.* To determine compliance with an open biological treatment system option specified in § 63.446(e)(2) and the monitoring requirements specified in § 63.453(j)(2), the percent reduction due to destruction in the biological treatment system shall be calculated using the following equation:

$$R = f_{\text{bio}} \times 100$$

Where:

R=Destruction of total HAP or methanol in the biological treatment process, percent.

f_{bio}=The fraction of total HAP or methanol removed in the biological treatment system. The site-specific biorate constants shall be determined using the procedures specified and as limited in appendix C of part 63.

(m) *Condensate segregation procedures.* The following procedures shall be used to demonstrate compliance with the condensate segregation requirements specified in § 63.446(c).

(1) To demonstrate compliance with the percent mass requirements specified in § 63.446(c)(1), the procedures specified in paragraphs (m)(1)(i) through (m)(1)(iii) of this section shall be performed.

(i) Determine the total HAP mass of all condensates from each equipment system listed in § 63.446 (b)(1) through (b)(3) using the procedures specified in paragraphs (c) and (j) of this section.

(ii) Multiply the total HAP mass determined in paragraph (m)(1)(i) of this section by 0.65 to determine the target HAP mass for the high-HAP fraction condensate stream or streams.

(iii) Compliance with the segregation requirements specified in § 63.446(c)(1) is demonstrated if the condensate stream or streams from each equipment system listed in § 63.446 (b)(1) through (b)(3) being treated as specified in § 63.446(e) contain at least as much total HAP mass as the target total HAP mass determined in paragraph (m)(1)(ii) of this section.

(2) To demonstrate compliance with the percent mass requirements specified in § 63.446(c)(2), the procedures specified in paragraphs (m)(2)(i) through (m)(2)(ii) of this section shall be performed.

(i) Determine the total HAP mass contained in the high-HAP fraction condensates from each equipment system listed in § 63.446(b)(1) through (b)(3) and the total condensates streams from the equipment systems listed in § 63.446(b)(4) and (b)(5), using the procedures specified in paragraphs (c) and (j) of this section.

(ii) Compliance with the segregation requirements specified in § 63.446(c)(2) is demonstrated if the total HAP mass determined in paragraph (m)(2)(i) of this section is equal to or greater than the appropriate mass requirements specified in § 63.446(c)(2).

(n) *Biological treatment system monitoring sampling storage.* The inlet and outlet grab samples required to be collected in § 63.453(j)(2) shall be stored at 4° C (40° F) to minimize the biodegradation of the organic compounds in the samples.

§ 63.458 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the CAA, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

(1) Section 63.6(g)—Use of an alternative nonopacity emission standard;

(2) Section 63.453(m)—Use of an alternative monitoring parameter;

(3) Section 63.457(b)(5)(iii)—Use of an alternative test method for total HAP or methanol in vents; and

(4) Section 63.457(c)(3)(ii)—Use of an alternative test method for total HAP or methanol in wastewater.

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TABLE 1 TO SUBPART S—GENERAL PROVISIONS APPLICABILITY TO SUBPART S^a

Reference	Applies to Subpart S	Comment
63.1(a)(1)–(3)	Yes.	Subpart S (this table) specifies applicability of each paragraph in subpart A to subpart S.
63.1(a)(4)	Yes	
63.1(a)(5)	No	Section reserved.
63.1(a)(6)–(8)	Yes.	Section reserved.
63.1(a)(9)	No	
63.1(a)(10)	No	Subpart S and other cross-referenced subparts specify calendar or operating day.
63.1(a)(11)–(14)	Yes.	Subpart S specifies its own applicability.
63.1(b)(1)	No	
63.1(b)(2)–(3)	Yes.	Section reserved.
63.1(c)(1)–(2)	Yes.	
63.1(c)(3)	No	Section reserved.
63.1(c)(4)–(5)	Yes.	
63.1(d)	No	Section reserved.
63.1(e)	Yes.	
63.2	Yes.	Section reserved.
63.3	Yes.	
63.4(a)(1)	Yes.	Section reserved.
63.4(a)(3)	No	
63.4(a)(4)	Yes.	Section reserved.
63.4(a)(5)	Yes.	
63.4(b)	Yes.	Section reserved.
63.4(c)	Yes.	
63.5(a)	Yes.	Section reserved.
63.5(b)(1)	Yes.	
63.5(b)(2)	No	Section reserved.
63.5(b)(3)	Yes.	
63.5(b)(4)–(6)	Yes.	Section reserved.
63.5(c)	No	

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TABLE 1 TO SUBPART S—GENERAL PROVISIONS APPLICABILITY TO SUBPART S^a—Continued

Reference	Applies to Subpart S	Comment
63.5(d)	Yes.	
63.5(e)	Yes.	
63.5(f)	Yes.	
63.6(a)	Yes.	
63.6(b)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(c)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(d)	No	Section reserved.
63.6(e)	Yes.	
63.6(f)	Yes.	
63.6(g)	Yes.	
63.6(h)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.6(i)	Yes.	
63.6(j)	Yes.	
63.7	Yes.	
63.8(a)(1)	Yes.	
63.8(a)(2)	Yes.	
63.8(a)(3)	No	Section reserved.
63.8(a)(4)	Yes.	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	Subpart S specifies locations to conduct monitoring.
63.8(b)(3)	Yes.	
63.8(c)(1)	Yes.	
63.8(c)(2)	Yes.	
63.8(c)(3)	Yes.	
63.8(c)(4)	No	Subpart S allows site specific determination of monitoring frequency in §63.453(n)(4).
63.8(c)(5)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.8(c)(6)	Yes.	
63.8(c)(7)	Yes.	
63.8(c)(8)	Yes.	
63.8(d)	Yes.	
63.8(e)	Yes.	
63.8(f)(1)–(5)	Yes.	
63.8(f)(6)	No	Subpart S does not specify relative accuracy test for CEM's.
63.8(g)	Yes.	
63.9(a)	Yes.	
63.9(b)	Yes	Initial notifications must be submitted within one year after the source becomes subject to the relevant standard.
63.9(c)	Yes.	
63.9(d)	No	Special compliance requirements are only applicable to kraft mills.
63.9(e)	Yes.	
63.9(f)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(1)	Yes.	
63.9(g)(2)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(3)	No	Subpart S does not specify relative accuracy tests, therefore no notification is required for an alternative.
63.9(h)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	
63.10(a)	Yes.	
63.10(b)	Yes.	
63.10(c)	Yes.	
63.10(d)(1)	Yes.	
63.10(d)(2)	Yes.	
63.10(d)(3)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(d)(4)	Yes.	
63.10(d)(5)	Yes.	
63.10(e)(1)	Yes.	
63.10(e)(2)(i)	Yes.	
63.10(e)(2)(ii)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(e)(3)	Yes.	
63.10(e)(4)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(f)	Yes.	
63.11–63.15	Yes.	

^aWherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

Subpart T—National Emission Standards for Halogenated Solvent Cleaning

SOURCE: 59 FR 61805, Dec. 2, 1994, unless otherwise noted.

§ 63.460 Applicability and designation of source.

(a) The provisions of this subpart apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machine that uses any solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. The concentration of these solvents may be determined using EPA test method 18, material safety data sheets, or engineering calculations. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not covered under the provisions of this subpart.

(b) Except as noted in appendix C (General Provisions Applicability to Subpart T) of this subpart, the provisions of subpart A of this part (General Provisions) apply to owners or operators of any solvent cleaning machine meeting the applicability criteria of paragraph (a) of this section.

(c) Each solvent cleaning machine subject to this subpart that commences construction or reconstruction after November 29, 1993, shall achieve compliance with the provisions of this subpart immediately upon startup or by December 2, 1994, whichever is later.

(d) Each solvent cleaning machine subject to this subpart that commenced construction or reconstruction on or before November 29, 1993, shall achieve compliance with the provisions of this subpart no later than December 2, 1997. Except that, any machine that commences construction or reconstruction on or before November 29, 1993, that does not use halogenated hazardous air pollutant (HAP) solvent on De-

cember 2, 1994, shall, if the machine begins use of halogenated HAP solvent after December 2, 1994, achieve compliance with the provisions of this subpart no later than December 2, 1997, or 60 days after commencing use of halogenated HAP solvent covered under this subpart whichever is later.

(e) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authority contained in paragraph (f) of this section shall be retained by the Administrator and not transferred to a State.

(f) The authority conferred in § 63.463(d)(9) and § 63.469 will not be delegated to any State.

[59 FR 61805, Dec. 2, 1994; 59 FR 67750, Dec. 30, 1994; 60 FR 29485, June 5, 1995]

§ 63.461 Definitions.

Unless defined below, all terms used in this subpart are used as defined in the 1990 Clean Air Act, or in subpart A of 40 CFR part 63:

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., State that has been delegated the authority to implement the provisions of this part.)

Air blanket means the layer of air inside the solvent cleaning machine freeboard located above the solvent/air interface. The centerline of the air blanket is equidistant between the sides of the machine.

Automated parts handling system means a mechanical device that carries all parts and parts baskets at a controlled speed from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts. Automated parts handling systems include, but are not limited to, hoists and conveyors.

Batch cleaning machine means a solvent cleaning machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the solvent cleaning machine. An open-top vapor cleaning machine is a type of batch cleaning machine. A solvent cleaning machine, such as a ferris wheel or a cross-rod degreaser, that

clean multiple batch loads simultaneously and are manually loaded are batch cleaning machines.

Carbon adsorber means a bed of activated carbon into which an air-solvent gas-vapor stream is routed and which adsorbs the solvent on the carbon.

Clean liquid solvent means fresh unused solvent, recycled solvent, or used solvent that has been cleaned of soils (e.g., skimmed of oils or sludge and strained of metal chips).

Cleaning capacity means, for a cleaning machine without a solvent/air interface, the maximum volume of parts that can be cleaned at one time. In most cases, the cleaning capacity is equal to the volume (length times width times height) of the cleaning chamber.

Cold cleaning machine means any device or piece of equipment that contains and/or uses liquid solvent, into which parts are placed to remove soils from the surfaces of the parts or to dry the parts. Cleaning machines that contain and use heated, nonboiling solvent to clean the parts are classified as cold cleaning machines.

Consumption means the amount of halogenated hazardous air pollutant solvent added to the solvent cleaning machine.

Continuous web cleaning machine means a solvent cleaning machine in which parts such as film, coils, wire, and metal strips are cleaned at speeds in excess of 11 feet per minute. Parts are generally uncoiled, cleaned such that the same part is simultaneously entering and exiting the solvent cleaning machine, and then recoiled or cut.

Cover means a lid, top, or portal cover that shields the solvent cleaning machine openings from air disturbances when in place and is designed to be easily opened and closed without disturbing the vapor zone. Air disturbances include, but are not limited to, lip exhausts, ventilation fans, and general room drafts. Types of covers include, but are not limited to, sliding, biparting, and rolltop covers.

Cross-rod solvent cleaning machine means a batch solvent cleaning machine in which parts baskets are suspended from "cross-rods" as they are moved through the machine. In a cross-rod cleaning machine, parts are loaded

semi-continuously, and enter and exit the machine from a single portal.

Downtime mode means the time period when a solvent cleaning machine is not cleaning parts and the sump heating coils, if present, are turned off.

Dwell means the technique of holding parts within the freeboard area but above the vapor zone of the solvent cleaning machine. Dwell occurs after cleaning to allow solvent to drain from the parts or parts baskets back into the solvent cleaning machine.

Dwell time means the required minimum length of time that a part must dwell, as determined by § 63.465(d).

Emissions means halogenated hazardous air pollutant solvent consumed (i.e., halogenated hazardous air pollutant solvent added to the machine) minus the liquid halogenated hazardous air pollutant solvent removed from the machine and the halogenated hazardous air pollutant solvent removed from the machine in the solid waste.

Existing means any solvent cleaning machine the construction or reconstruction of which was commenced on or before November 29, 1993. A machine, the construction or reconstruction of which was commenced on or before November 29, 1993, but that did not meet the definition of a solvent cleaning machine on December 2, 1994, because it did not use halogenated HAP solvent liquid or vapor covered under this subpart to remove soils, becomes an existing source when it commences to use such liquid or vapor. A solvent cleaning machine moved within a contiguous facility or to another facility under the same ownership, constitutes an existing machine.

Freeboard area means; for a batch cleaning machine, the area within the solvent cleaning machine that extends from the solvent/air interface to the top of the solvent cleaning machine; for an in-line cleaning machine, it is the area within the solvent cleaning machine that extends from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower.

Freeboard height means; for a batch cleaning machine, the distance from the solvent/air interface, as measured during the idling mode, to the top of the cleaning machine; for an in-line

cleaning machine, it is the distance from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower, as measured during the idling mode.

Freeboard ratio means the ratio of the solvent cleaning machine freeboard height to the smaller interior dimension (length, width, or diameter) of the solvent cleaning machine.

Freeboard refrigeration device (also called a chiller) means a set of secondary coils mounted in the freeboard area that carries a refrigerant or other chilled substance to provide a chilled air blanket above the solvent vapor. A primary condenser capable of meeting the requirements of § 63.463(e)(2)(i) is defined as both a freeboard refrigeration device and a primary condenser for the purposes of these standards.

Halogenated hazardous air pollutant solvent or halogenated HAP solvent means methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS No. 67-66-3).

Hoist means a mechanical device that carries the parts basket and the parts to be cleaned from the loading area into the solvent cleaning machine and to the unloading area at a controlled speed. A hoist may be operated by controls or may be programmed to cycle parts through the cleaning cycle automatically.

Idling mode means the time period when a solvent cleaning machine is not actively cleaning parts and the sump heating coils, if present, are turned on.

Idling-mode cover means any cover or solvent cleaning machine design that allows the cover to shield the cleaning machine openings during the idling mode. A cover that meets this definition can also be used as a working-mode cover if that definition is also met.

Immersion cold cleaning machine means a cold cleaning machine in which the parts are immersed in the solvent when being cleaned. A remote reservoir cold cleaning machine that is also an immersion cold cleaning machine is considered an immersion cold cleaning machine for purposes of this subpart.

In-line cleaning machine or continuous cleaning machine means a solvent cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a continuous supply of parts to be cleaned. These units are fully enclosed except for the conveyor inlet and exit portals. In-line cleaning machines can be either cold or vapor cleaning machines.

Leak-proof coupling means a threaded or other type of coupling that prevents solvents from leaking while filling or draining solvent to and from the solvent cleaning machine.

Lip exhaust means a device installed at the top of the opening of a solvent cleaning machine that draws in air and solvent vapor from the freeboard area and ducts the air and vapor away from the solvent cleaning area.

Monthly reporting period means any calendar month in which the owner or operator of a solvent cleaning machine is required to calculate and report the solvent emissions from each solvent cleaning machine.

New means any solvent cleaning machine the construction or reconstruction of which is commenced after November 29, 1993.

Open-top vapor cleaning machine means a batch solvent cleaning machine that has its upper surface open to the air and boils solvent to create solvent vapor used to clean and/or dry parts.

Part means any object that is cleaned in a solvent cleaning machine. Parts include, but are not limited to, discrete parts, assemblies, sets of parts, and parts cleaned in a continuous web cleaning machine (i.e., continuous sheets of metal, film).

Primary condenser means a series of circumferential cooling coils on a vapor cleaning machine through which a chilled substance is circulated or recirculated to provide continuous condensation of rising solvent vapors and, thereby, create a concentrated solvent vapor zone.

Reduced room draft means decreasing the flow or movement of air across the top of the freeboard area of the solvent cleaning machine to meet the specifications of § 63.463(e)(2)(ii). Methods of

achieving a reduced room draft include, but are not limited to, redirecting fans and/or air vents to not blow across the cleaning machine, moving the cleaning machine to a corner where there is less room draft, and constructing a partial or complete enclosure around the cleaning machine.

Remote reservoir cold cleaning machine means any device in which liquid solvent is pumped to a sink-like work area that drains solvent back into an enclosed container while parts are being cleaned, allowing no solvent to pool in the work area.

Soils means contaminants that are removed from the parts being cleaned. Soils include, but are not limited to, grease, oils, waxes, metal chips, carbon deposits, fluxes, and tars.

Solvent/air interface means, for a vapor cleaning machine, the location of contact between the concentrated solvent vapor layer and the air. This location of contact is defined as the mid-line height of the primary condenser coils. For a cold cleaning machine, it is the location of contact between the liquid solvent and the air.

Solvent/air interface area means; for a vapor cleaning machine, the surface area of the solvent vapor zone that is exposed to the air; for an in-line cleaning machine, it is the total surface area of all the sumps; for a cold cleaning machine, it is the surface area of the liquid solvent that is exposed to the air.

Solvent cleaning machine means any device or piece of equipment that uses halogenated HAP solvent liquid or vapor to remove soils from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machines. Buckets, pails, and beakers with capacities of 7.6 liters (2 gallons) or less are not considered solvent cleaning machines.

Solvent vapor zone means; for a vapor cleaning machine, the area that extends from the liquid solvent surface to the level that solvent vapor is condensed. This condensation level is defined as the midline height of the primary condenser coils.

Sump means the part of a solvent cleaning machine where the liquid solvent is located.

Sump heater coils means the heating system on a cleaning machine that uses steam, electricity, or hot water to heat or boil the liquid solvent.

Superheated vapor system means a system that heats the solvent vapor, either passively or actively, to a temperature above the solvent's boiling point. Parts are held in the superheated vapor before exiting the machine to evaporate the liquid solvent on them. Hot vapor recycle is an example of a superheated vapor system.

Vapor cleaning machine means a batch or in-line solvent cleaning machine that boils liquid solvent generating solvent vapor that is used as a part of the cleaning or drying cycle.

Water layer means a layer of water that floats above the denser solvent and provides control of solvent emissions. In many cases, the solvent used in batch cold cleaning machines is sold containing the appropriate amount of water to create a water cover.

Working mode means the time period when the solvent cleaning machine is actively cleaning parts.

Working-mode cover means any cover or solvent cleaning machine design that allows the cover to shield the cleaning machine openings from outside air disturbances while parts are being cleaned in the cleaning machine. A cover that is used during the working mode is opened only during parts entry and removal. A cover that meets this definition can also be used as an idling-mode cover if that definition is also met.

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995, as amended at 63 FR 24751, May 5, 1998]

§ 63.462 Batch cold cleaning machine standards.

(a) Each owner or operator of an immersion batch cold solvent cleaning machine shall comply with the requirements specified in paragraph (a)(1) or (a)(2) of this section.

(1) Employ a tightly fitting cover that shall be closed at all times except during parts entry and removal, and a water layer at a minimum thickness of 2.5 centimeters (1.0 inch) on the surface

of the solvent within the cleaning machine, or

(2) Employ a tightly fitting cover that shall be closed at all times except during parts entry and removal and a freeboard ratio of 0.75 or greater.

(b) Each owner or operator of a remote-reservoir batch cold solvent cleaning machine shall employ a tightly fitting cover over the solvent sump that shall be closed at all times except during the cleaning of parts.

(c) Each owner or operator of a batch cold solvent cleaning machine complying with paragraphs (a)(2) or (b) of this section shall comply with the work and operational practice requirements specified in paragraphs (c)(1) through (c)(8) of this section.

(1) All waste solvent shall be collected and stored in closed containers. The closed container may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(2) If a flexible hose or flushing device is used, flushing shall be performed only within the freeboard area of the solvent cleaning machine.

(3) The owner or operator shall drain solvent cleaned parts for 15 seconds or until dripping has stopped, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while draining.

(4) The owner or operator shall ensure that the solvent level does not exceed the fill line.

(5) Spills during solvent transfer shall be wiped up immediately. The wipe rags shall be stored in covered containers meeting the requirements of paragraph (c)(1) of this section.

(6) When an air- or pump-agitated solvent bath is used, the owner or operator shall ensure that the agitator is operated to produce a rolling motion of the solvent but not observable splashing against tank walls or parts being cleaned.

(7) The owner or operator shall ensure that, when the cover is open, the cold cleaning machine is not exposed to drafts greater than 40 meters per minute (132 feet per minute), as measured between 1 and 2 meters (3.3 and 6.6 feet) upwind and at the same elevation as the tank lip.

(8) Sponges, fabric, wood, and paper products shall not be cleaned.

(d) Each owner or operator of a batch cold cleaning machine shall submit an initial notification report as described in § 63.468 (a) and (b) and a compliance report as described in § 63.468(c).

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

§ 63.463 Batch vapor and in-line cleaning machine standards.

(a) Except as provided in § 63.464, each owner or operator of a solvent cleaning machine subject to the provisions of this subpart shall ensure that each existing or new batch vapor or in-line solvent cleaning machine subject to the provisions of this subpart conforms to the design requirements specified in paragraphs (a)(1) through (a)(7) of this section.

(1) Each cleaning machine shall be designed or operated to meet the control equipment or technique requirements in paragraph (a)(1)(i) or (a)(1)(ii) of this section.

(i) An idling and downtime mode cover, as described in § 63.463(d)(1)(i), that may be readily opened or closed, that completely covers the cleaning machine openings when in place, and is free of cracks, holes, and other defects.

(ii) A reduced room draft as described in § 63.463(e)(2)(ii).

(2) Each cleaning machine shall have a freeboard ratio of 0.75 or greater.

(3) Each cleaning machine shall have an automated parts handling system capable of moving parts or parts baskets at a speed of 3.4 meters per minute (11 feet per minute) or less from the initial loading of parts through removal of cleaned parts.

(4) Each vapor cleaning machine shall be equipped with a device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils.

(5) Each vapor cleaning machine shall be equipped with a vapor level control device that shuts off sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser.

(6) Each vapor cleaning machine shall have a primary condenser.

(7) Each cleaning machine that uses a lip exhaust shall be designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber that meets the requirements of paragraph (e)(2)(vii) of this section.

(b) Except as provided in § 63.464, each owner or operator of an existing or new batch vapor cleaning machine shall comply with either paragraph (b)(1) or (b)(2) of this section.

(1) Each owner or operator of a batch vapor cleaning machine with a solvent/air interface area of 1.21 square meters (13 square feet) or less shall comply with the requirements specified in either paragraph (b)(1)(i) or (b)(1)(ii) of this section.

(i) Employ one of the control combinations listed in table 1 of this subpart or other equivalent methods of control as determined using the procedure in § 63.469, equivalent methods of control.

TABLE 1—CONTROL COMBINATIONS FOR BATCH VAPOR SOLVENT CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE AREA OF 1.21 SQUARE METERS (13 SQUARE FEET) OR LESS

Option	Control combinations
1	Working-mode cover, freeboard ratio of 1.0, superheated vapor.
2	Freeboard refrigeration device, superheated vapor.
3	Working-mode cover, freeboard refrigeration device.
4	Reduced room draft, freeboard ratio of 1.0, superheated vapor.
5	Freeboard refrigeration device, reduced room draft.
6	Freeboard refrigeration device, freeboard ratio of 1.0.
7	Freeboard refrigeration device, dwell.
8	Reduced room draft, dwell, freeboard ratio of 1.0.
9	Freeboard refrigeration device, carbon adsorber.
10	Freeboard ratio of 1.0, superheated vapor, carbon adsorber.

Note: Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.22 kilograms per hour per square meter (0.045 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in § 63.465(a) and appendix A to this part.

(2) Each owner or operator of a batch vapor cleaning machine with a solvent/air interface area greater than 1.21 square meters (13 square feet) shall comply with the requirements specified in either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) Employ one of the control combinations listed in table 2 of this subpart or other equivalent methods of control as determined using the procedure in § 63.469, equivalent methods of control.

TABLE 2—CONTROL COMBINATIONS FOR BATCH VAPOR SOLVENT CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE AREA GREATER THAN 1.21 SQUARE METERS (13 SQUARE FEET)

Option	Control combinations
1	Freeboard refrigeration device, freeboard ratio of 1.0, superheated vapor.
2	Dwell, freeboard refrigeration device, reduced room draft.
3	Working-mode cover, freeboard refrigeration device, superheated vapor.
4	Freeboard ratio of 1.0, reduced room draft, superheated vapor.
5	Freeboard refrigeration device, reduced room draft, superheated vapor.
6	Freeboard refrigeration device, reduced room draft, freeboard ratio of 1.0.
7	Freeboard refrigeration device, superheated vapor, carbon adsorber.

Note: Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.22 kilograms per hour per square meter (0.045 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in § 63.465(a) and appendix A of this part.

(c) Except as provided in § 63.464, each owner or operator of an in-line cleaning machine shall comply with paragraph (c)(1) or (c)(2) of this section as appropriate.

(1) Each owner or operator of an existing in-line cleaning machine shall comply with the requirements specified in either paragraph (c)(1)(i) or (c)(1)(ii) of this section.

(i) Employ one of the control combinations listed in table 3 of this subpart or other equivalent methods of control as determined using the procedure in § 63.469, equivalent methods of control.

TABLE 3—CONTROL COMBINATIONS FOR EXISTING IN-LINE SOLVENT CLEANING MACHINES

Option	Control combinations
1	Superheated vapor, freeboard ratio of 1.0.
2	Freeboard refrigeration device, freeboard ratio of 1.0.
3	Dwell, freeboard refrigeration device.
4	Dwell, carbon adsorber.

Note: Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.10 kilograms per hour per square meter (0.021 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in § 63.465(a) and appendix A to this part.

(2) Each owner or operator of a new in-line cleaning machine shall comply with the requirements specified in either paragraph (c)(2)(i) or (c)(2)(ii) of this section.

(i) Employ one of the control combinations listed in table 4 of this subpart or other equivalent methods of control as determined using the procedure in § 63.469, equivalent methods of control section.

TABLE 4—CONTROL COMBINATIONS FOR NEW IN-LINE SOLVENT CLEANING MACHINES

Option	Control combinations
1	Superheated vapor, freeboard refrigeration device.
2	Freeboard refrigeration device, carbon adsorber.
3	Superheated vapor, carbon adsorber.

Note: Unlike most of the control techniques available for complying with this rule, carbon adsorbers are not considered to be a pollution prevention measure. Use of such units may impose additional cost and burden for a number of reasons. First, carbon adsorption units are generally more expensive than other controls listed in the options. Second, these units may present cross-media impacts such as effluent discharges if not properly operated and maintained, and spent carbon beds have to be disposed of as hazardous waste. When making decisions about what controls to install on halogenated solvent cleaning machines to meet the requirements of this rule, all of these factors should be weighed and pollution prevention measures are encouraged wherever possible.

(ii) Demonstrate that their solvent cleaning machine can achieve and maintain an idling emission limit of 0.10 kilograms per hour per square meter (0.021 pounds per hour per square foot) of solvent/air interface area as determined using the procedures in § 63.465(a) and appendix A to this part.

(d) Except as provided in § 63.464, each owner or operator of an existing or new batch vapor or in-line solvent cleaning machine shall meet all of the following required work and operational practices specified in paragraph (d)(1) through (d)(12) of this section as applicable.

(1) Control air disturbances across the cleaning machine opening(s) by incorporating the control equipment or techniques in paragraph (d)(1)(i) or (d)(1)(ii) of this section.

(i) Cover(s) to each solvent cleaning machine shall be in place during the idling mode, and during the downtime mode unless either the solvent has been removed from the machine or maintenance or monitoring is being performed that requires the cover(s) to not be in place.

(ii) A reduced room draft as described in § 63.463(e)(2)(ii).

(2) The parts baskets or the parts being cleaned in an open-top batch vapor cleaning machine shall not occupy more than 50 percent of the solvent/air interface area unless the parts baskets or parts are introduced at a

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speed of 0.9 meters per minute (3 feet per minute) or less.

(3) Any spraying operations shall be done within the vapor zone or within a section of the solvent cleaning machine that is not directly exposed to the ambient air (i.e., a baffled or enclosed area of the solvent cleaning machine).

(4) Parts shall be oriented so that the solvent drains from them freely. Parts having cavities or blind holes shall be tipped or rotated before being removed from any solvent cleaning machine unless an equally effective approach has been approved by the Administrator.

(5) Parts baskets or parts shall not be removed from any solvent cleaning machine until dripping has stopped.

(6) During startup of each vapor cleaning machine, the primary condenser shall be turned on before the sump heater.

(7) During shutdown of each vapor cleaning machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off.

(8) When solvent is added or drained from any solvent cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

(9) Each solvent cleaning machine and associated controls shall be maintained as recommended by the manufacturers of the equipment or using alternative maintenance practices that have been demonstrated to the Administrator's satisfaction to achieve the same or better results as those recommended by the manufacturer.

(10) Each operator of a solvent cleaning machine shall complete and pass the applicable sections of the test of solvent cleaning operating procedures in appendix B to this part if requested during an inspection by the Administrator.

(11) Waste solvent, still bottoms, and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that would allow pressure relief, but would not allow liquid solvent to drain from the container.

(12) Sponges, fabric, wood, and paper products shall not be cleaned.

(e) Each owner or operator of a solvent cleaning machine complying with either paragraph (b) or (c) of this section shall comply with the requirements specified in paragraphs (e)(1) through (e)(4) of this section.

(1) Conduct monitoring of each control device used to comply with § 63.463 of this subpart as provided in § 63.466.

(2) Determine during each monitoring period whether each control device used to comply with these standards meets the requirements specified in paragraphs (e)(2)(i) through (e)(2)(vii) of this section.

(i) If a freeboard refrigeration device is used to comply with these standards, the owner or operator shall ensure that the chilled air blanket temperature (in °F), measured at the center of the air blanket, is no greater than 30 percent of the solvent's boiling point.

(ii) If a reduced room draft is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) Ensure that the flow or movement of air across the top of the freeboard area of the solvent cleaning machine or within the solvent cleaning machine enclosure does not exceed 15.2 meters per minute (50 feet per minute) at any time as measured using the procedures in § 63.466(d).

(B) Establish and maintain the operating conditions under which the wind speed was demonstrated to be 15.2 meters per minute (50 feet per minute) or less as described in § 63.466(d).

(iii) If a working-mode cover is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(iii)(A) and (e)(2)(iii)(B) of this section.

(A) Ensure that the cover opens only for part entrance and removal and completely covers the cleaning machine openings when closed.

(B) Ensure that the working-mode cover is maintained free of cracks, holes, and other defects.

(iv) If an idling-mode cover is used to comply with these standards, the owner or operator shall comply with

the requirements specified in paragraphs (e)(2)(iv)(A) and (e)(2)(iv)(B) of this section.

(A) Ensure that the cover is in place whenever parts are not in the solvent cleaning machine and completely covers the cleaning machine openings when in place.

(B) Ensure that the idling-mode cover is maintained free of cracks, holes, and other defects.

(v) If a dwell is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(v)(A) and (e)(2)(v)(B) of this section.

(A) Determine the appropriate dwell time for each type of part or parts basket, or determine the maximum dwell time using the most complex part type or parts basket, as described in § 63.465(d).

(B) Ensure that, after cleaning, each part is held in the solvent cleaning machine freeboard area above the vapor zone for the dwell time determined for that particular part or parts basket, or for the maximum dwell time determined using the most complex part type or parts basket.

(vi) If a superheated vapor system is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(vi)(A) through (e)(2)(vi)(C) of this section.

(A) Ensure that the temperature of the solvent vapor at the center of the superheated vapor zone is at least 10°F above the solvent's boiling point.

(B) Ensure that the manufacturer's specifications for determining the minimum proper dwell time within the superheated vapor system is followed.

(C) Ensure that parts remain within the superheated vapor for at least the minimum proper dwell time.

(vii) If a carbon adsorber in conjunction with a lip exhaust is used to comply with these standards, the owner or operator shall comply with the requirements specified in paragraphs (e)(2)(vii)(A) through (e)(2)(vii)(C) of this section.

(A) Ensure that the concentration of organic solvent in the exhaust from this device does not exceed 100 parts per million of any halogenated HAP compound as measured using the proce-

dure in § 63.466(e). If the halogenated HAP solvent concentration in the carbon adsorber exhaust exceeds 100 parts per million, the owner or operator shall adjust the desorption schedule or replace the disposable canister, if not a regenerative system, so that the exhaust concentration of halogenated HAP solvent is brought below 100 parts per million.

(B) Ensure that the carbon adsorber bed is not bypassed during desorption.

(C) Ensure that the lip exhaust is located above the solvent cleaning machine cover so that the cover closes below the lip exhaust level.

(3) If any of the requirements of paragraph (e)(2) of this section are not met, determine whether an exceedance has occurred using the criteria in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.

(i) An exceedance has occurred if the requirements of paragraphs (e)(2)(ii)(B), (e)(2)(iii)(A), (e)(2)(iv)(A), (e)(2)(v), (e)(2)(vi)(B), (e)(2)(vi)(C), (e)(2)(vii)(B), or (e)(2)(vii)(C) of this section have not been met.

(ii) An exceedance has occurred if the requirements of paragraphs (e)(2)(i), (e)(2)(ii)(A), (e)(2)(iii)(B), (e)(2)(iv)(B), (e)(2)(vi)(A), or (e)(2)(vii)(A) of this section have not been met and are not corrected within 15 days of detection. Adjustments or repairs shall be made to the solvent cleaning system or control device to reestablish required levels. The parameter must be remeasured immediately upon adjustment or repair and demonstrated to be within required limits.

(4) The owner or operator shall report all exceedances and all corrections and adjustments made to avoid an exceedance as specified in § 63.468(h).

(f) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the idling emission limit standards in paragraphs (b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) of this section shall comply with the requirements specified in paragraphs (f)(1) through (f)(5) of this section.

(1) Conduct an initial performance test to comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section.

(i) Demonstrate compliance with the applicable idling emission limit.

(ii) Establish parameters that will be monitored to demonstrate compliance. If a control device is used that is listed in paragraph (e)(2) of this section, then the requirements for that control device as listed in paragraph (e)(2) of this section shall be used unless the owner or operator can demonstrate to the Administrator's satisfaction that an alternative strategy is equally effective.

(2) Conduct the periodic monitoring of the parameters used to demonstrate compliance as described in § 63.466(f).

(3) Operate the solvent cleaning machine within parameters identified in the initial performance test.

(4) If any of the requirements in paragraphs (f)(1) through (f)(3) of this section are not met, determine whether an exceedance has occurred using the criteria in paragraphs (f)(4)(i) and (f)(4)(ii) of this section.

(i) If using a control listed in paragraph (e) of this section, the owner or operator shall comply with the appropriate parameter values in paragraph (e)(2) and the exceedance delineations in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.

(ii) If using a control not listed in paragraph (e) of this section, the owner or operator shall indicate whether the exceedance of the parameters that are monitored to determine the proper functioning of this control would be classified as an immediate exceedance or whether a 15 day repair period would be allowed. This information must be submitted to the Administrator for approval.

(5) The owner or operator shall report all exceedances and all corrections and adjustments made to avoid an exceedance as specified in § 63.468(h).

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

§ 63.464 Alternative standards.

(a) As an alternative to meeting the requirements in § 63.463, each owner or operator of a batch vapor or in-line solvent cleaning machine can elect to comply with the requirements of § 63.464. An owner or operator of a solvent cleaning machine who elects to comply with § 63.464 shall comply with the requirements specified in either paragraph (a)(1) or (a)(2) of this section.

(1) If the cleaning machine has a solvent/air interface, as defined in § 63.461, the owner or operator shall comply with the requirements specified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(i) Maintain a log of solvent additions and deletions for each solvent cleaning machine.

(ii) Ensure that the emissions from each solvent cleaning machine are equal to or less than the applicable emission limit presented in table 5 of this subpart as determined using the procedures in § 63.465(b) and (c).

TABLE 5—EMISSION LIMITS FOR BATCH VAPOR AND IN-LINE SOLVENT CLEANING MACHINES WITH A SOLVENT/AIR INTERFACE

Solvent cleaning machine	3-month rolling average monthly emission limit (kilograms/square meters/month)
Batch vapor solvent cleaning machines	150
Existing in-line solvent cleaning machines	153
New in-line solvent cleaning machines	99

(2) If the cleaning machine is a batch vapor cleaning machine and does not have a solvent/air interface, the owner or operator shall comply with the requirements specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) Maintain a log of solvent additions and deletions for each solvent cleaning machine.

(ii) Ensure that the emissions from each solvent cleaning machine are equal to or less than the appropriate limits as described in paragraphs (a)(2)(ii)(A) and (a)(2)(ii)(B) of this section.

(A) For cleaning machines with a cleaning capacity, as reported in § 63.468(d), that is less than or equal to 2.95 cubic meters, the emission limit shall be determined using table 6 or equation 1. If using table 6, and the cleaning capacity of the cleaning machine falls between two cleaning capacity sizes, then the lower of the two emission limits applies.

(B) For cleaning machines with a cleaning capacity as reported in § 63.468(d), that is greater than 2.95

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cubic meters, the emission limit shall be determined using equation 1.

$$EL = 330 * (Vol)^{0.6} \quad (1)$$

where:

EL = the 3-month rolling average monthly emission limit (kilograms/month).

TABLE 6—EMISSION LIMITS FOR CLEANING MACHINES WITHOUT A SOLVENT/AIR INTERFACE

Cleaning capacity (cubic meters)	3-month rolling average monthly emission limit (kilograms/month)
0.00	0
0.05	55
0.10	83
0.15	106
0.20	126
0.25	144
0.30	160
0.35	176
0.40	190
0.45	204
0.50	218
0.55	231
0.60	243
0.65	255
0.70	266
0.75	278
0.80	289
0.85	299
0.90	310
0.95	320
1.00	330
1.05	340
1.10	349
1.15	359
1.20	368
1.25	377
1.30	386
1.35	395
1.40	404
1.45	412
1.50	421
1.55	429
1.60	438
1.65	446
1.70	454
1.75	462
1.80	470
1.85	477
1.90	485
1.95	493
2.00	500
2.05	508
2.10	515
2.15	522
2.20	530
2.25	537
2.30	544
2.35	551
2.40	558
2.45	565
2.50	572
2.55	579
2.60	585
2.65	592
2.70	599
2.75	605
2.80	612
2.85	619
2.90	625

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TABLE 6—EMISSION LIMITS FOR CLEANING MACHINES WITHOUT A SOLVENT/AIR INTERFACE—Continued

Cleaning capacity (cubic meters)	3-month rolling average monthly emission limit (kilograms/month)
2.95	632

Vol = the cleaning capacity of the solvent cleaning machine (cubic meters).

(b) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with §63.464(a) shall demonstrate compliance with the applicable 3-month rolling average monthly emission limit on a monthly basis as described in §63.465(b) and (c).

(c) If the applicable 3-month rolling average emission limit is not met, an exceedance has occurred. All exceedances shall be reported as required in §63.468(h).

§ 63.465 Test methods.

(a) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with an idling emission limit standard in §63.463(b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) shall determine the idling emission rate of the solvent cleaning machine using Reference Method 307 in appendix A to this part.

(b) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with §63.464 shall on the first operating day of every month ensure that the solvent cleaning machine system contains only clean liquid solvent. This includes, but is not limited to, fresh unused solvent, recycled solvent and used solvent that has been cleaned of soils. A fill line must be indicated during the first month the measurements are made. The solvent level within the machine must be returned to the same fill-line each month, immediately prior to calculating monthly emissions as specified in §63.465(c). The solvent cleaning machine does not have to be emptied and filled with fresh unused solvent prior to the calculations.

(c) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with §63.464 shall on the first operating day of the month

comply with the requirements specified in paragraphs (c)(1) through (c)(3) of this section.

(1) Using the records of all solvent additions and deletions for the previous monthly reporting period required under § 63.464(a), determine solvent emissions (E_i) using equation 2 for cleaning machines with a solvent/air interface and equation 3 for cleaning machines without a solvent/air interface:

$$E_i = \frac{SA_i - LSR_i - SSR_i}{AREA_i} \quad (2)$$

$$E_n = SA_i - LSR_i - SSR_i \quad (3)$$

where:

E_i =the total halogenated HAP solvent emissions from the solvent cleaning machine during the most recent monthly reporting period i , (kilograms of solvent per square meter of solvent/air interface area per month).

E_n =the total halogenated HAP solvent emissions from the solvent cleaning machine during the most recent monthly reporting period i , (kilograms of solvent per month).

SA_i =the total amount of halogenated HAP liquid solvent added to the solvent cleaning machine during the most recent monthly reporting period i , (kilograms of solvent per month).

LSR_i =the total amount of halogenated HAP liquid solvent removed from the solvent cleaning machine during the most recent monthly reporting period i , (kilograms of solvent per month).

SSR_i =the total amount of halogenated HAP solvent removed from the solvent cleaning machine in solid waste, obtained as described in paragraph (c)(2) of this section, during the most recent monthly reporting period i , (kilograms of solvent per month).

$AREA_i$ =the solvent/air interface area of the solvent cleaning machine (square meters).

(2) Determine SSR_i using the method specified in paragraph (c)(2)(i) or (c)(2)(ii) of this section.

(i) From tests conducted using EPA reference method 25d.

(ii) By engineering calculations included in the compliance report.

(3) Determine the monthly rolling average, EA , for the 3-month period ending with the most recent reporting period using equation 4 for cleaning machines with a solvent/air interface or equation 5 for cleaning machines without a solvent/air interface:

$$EA_i = \frac{\sum_{j=1}^3 E_i}{3} \quad (4)$$

$$EA_n = \frac{\sum_{j=1}^3 E_n}{3} \quad (5)$$

Where:

EA_i =the average halogenated HAP solvent emissions over the preceding 3 monthly reporting periods, (kilograms of solvent per square meter of solvent/air interface area per month).

EA_n =the average halogenated HAP solvent emissions over the preceding 3 monthly reporting periods (kilograms of solvent per month).

E_i =halogenated HAP solvent emissions for each month (j) for the most recent 3 monthly reporting periods (kilograms of solvent per square meter of solvent/air interface area).

E_n =halogenated HAP solvent emissions for each month (j) for the most recent 3 monthly reporting periods (kilograms of solvent per month).

$j=1$ = the most recent monthly reporting period.

$j=2$ = the monthly reporting period immediately prior to $j=1$.

$j=3$ = the monthly reporting period immediately prior to $j=2$.

(d) Each owner or operator of a batch vapor or in-line solvent cleaning machine using a dwell to comply with § 63.463 shall determine the appropriate dwell time for each part or parts basket using the procedure specified in paragraphs (d)(1) and (d)(2) of this section.

(1) Determine the amount of time for the part or parts basket to cease dripping once placed in the vapor zone. The

part or parts basket used for this determination must be at room temperature before being placed in the vapor zone.

(2) The proper dwell time for parts to remain in the freeboard area above the vapor zone is no less than 35 percent of the time determined in paragraph (d)(1) of this section.

(e) An owner or operator of a source shall determine their potential to emit from all solvent cleaning operations, using the procedures described in paragraphs (e)(1) through (e)(3) of this section. A facility's total potential to emit is the sum of the HAP emissions from all solvent cleaning operations, plus all HAP emissions from other sources within the facility.

(1) Determine the potential to emit for each individual solvent cleaning using equation 6.

$$PTE_i = H_i \times W_i \times SAI_i \quad (6)$$

Where:

PTE_i = the potential to emit for solvent cleaning machine i (kilograms of solvent per year).

H_i = hours of operation for solvent cleaning machine i (hours per year).

= 8760 hours per year, unless otherwise restricted by a Federally enforceable requirement.

W_i = the working mode uncontrolled emission rate (kilograms per square meter per hour).

= 1.95 kilograms per square meter per hour for batch vapor and cold cleaning machines.

= 1.12 kilograms per square meter per hour for in-line cleaning machines.

SAI_i = solvent/air interface area of solvent cleaning machine i (square meters). Section 63.461 defines the solvent/air interface area for those machines that have a solvent/air interface. Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using the procedure in paragraph (e)(2) of this section.

(2) Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using equation 7.

$$SAI = 2.20 * (Vol)^{0.6} \quad (7)$$

Where:

SAI = the solvent/air interface area (square meters).

Vol = the cleaning capacity of the solvent cleaning machine (cubic meters).

(3) Sum the PTE_i for all solvent cleaning operations to obtain the total potential to emit for solvent cleaning operations at the facility.

§ 63.466 Monitoring procedures.

(a) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment standards in § 63.463 (b)(1)(i), (b)(2)(i), (c)(1)(i), or (c)(2)(i) shall conduct monitoring and record the results on a weekly basis for the control devices, as appropriate, specified in paragraphs (a)(1) and (a)(2) of this section.

(1) If a freeboard refrigeration device is used to comply with these standards, the owner or operator shall use a thermometer or thermocouple to measure the temperature at the center of the air blanket during the idling mode.

(2) If a superheated vapor system is used to comply with these standards, the owner or operator shall use a thermometer or thermocouple to measure the temperature at the center of the superheated solvent vapor zone while the solvent cleaning machine is in the idling mode.

(b) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment standards of § 63.463 (b)(1)(i), (b)(2)(i), (c)(1)(i), or (c)(2)(i) shall conduct monitoring and record the results on a monthly basis for the control devices, as appropriate, specified in paragraphs (b)(1) and (b)(2) of this section.

(1) If a cover (working-mode, down-time-mode, and/or idling-mode cover) is used to comply with these standards, the owner or operator shall conduct a visual inspection to determine if the cover is opening and closing properly, completely covers the cleaning machine openings when closed, and is free of cracks, holes, and other defects.

(2) If a dwell is used, the owner or operator shall determine the actual dwell time by measuring the period of time that parts are held within the freeboard area of the solvent cleaning machine after cleaning.

(c) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment or idling standards in § 63.463 shall monitor the hoist speed as described in paragraphs (c)(1) through (c)(4) of this section.

(1) The owner or operator shall determine the hoist speed by measuring the time it takes for the hoist to travel a measured distance. The speed is equal to the distance in meters divided by the time in minutes (meters per minute).

(2) The monitoring shall be conducted monthly. If after the first year, no exceedances of the hoist speed are measured, the owner or operator may begin monitoring the hoist speed quarterly.

(3) If an exceedance of the hoist speed occurs during quarterly monitoring, the monitoring frequency returns to monthly until another year of compliance without an exceedance is demonstrated.

(4) If an owner or operator can demonstrate to the Administrator's satisfaction in the initial compliance report that the hoist cannot exceed a speed of 3.4 meters per minute (11 feet per minute), the required monitoring frequency is quarterly, including during the first year of compliance.

(d) Except as provided in paragraph (g) of this section, each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the equipment standards in § 63.463 (b)(1)(i), (b)(2)(i), (c)(1)(i), or (c)(2)(i) using a reduced room draft shall conduct monitoring and record the results as specified in paragraph (d)(1) or (d)(2) of this section.

(1) If the reduced room draft is maintained by controlling room parameters (i.e., redirecting fans, closing doors and windows, etc.), the owner or operator shall conduct an initial monitoring test of the windspeed and of room parameters, quarterly monitoring of windspeed, and weekly monitoring of room parameters as specified in paragraphs (d)(1)(i) and (d)(1)(ii) of this section.

(i) Measure the windspeed within 6 inches above the top of the freeboard area of the solvent cleaning machine

using the procedure specified in paragraphs (d)(1)(i)(A) through (d)(1)(i)(D) of this section.

(A) Determine the direction of the wind current by slowly rotating a velometer or similar device until the maximum speed is located.

(B) Orient a velometer in the direction of the wind current at each of the four corners of the machine.

(C) Record the reading for each corner.

(D) Average the values obtained at each corner and record the average wind speed.

(ii) Monitor on a weekly basis the room parameters established during the initial compliance test that are used to achieve the reduced room draft.

(2) If an enclosure (full or partial) is used to achieve a reduced room draft, the owner or operator shall conduct an initial monitoring test and, thereafter, monthly monitoring tests of the windspeed within the enclosure using the procedure specified in paragraphs (d)(2)(i) and (d)(2)(ii) of this section and a monthly visual inspection of the enclosure to determine if it is free of cracks, holes and other defects.

(i) Determine the direction of the wind current in the enclosure by slowly rotating a velometer inside the entrance to the enclosure until the maximum speed is located.

(ii) Record the maximum wind speed.

(e) Except as provided in paragraph (g) of this section, each owner or operator using a carbon adsorber to comply with this subpart shall measure and record the concentration of halogenated HAP solvent in the exhaust of the carbon adsorber weekly with a colorimetric detector tube. This test shall be conducted while the solvent cleaning machine is in the working mode and is venting to the carbon adsorber. The exhaust concentration shall be determined using the procedure specified in paragraphs (e)(1) through (e)(3) of this section.

(1) Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of solvent in air to an accuracy of ± 25 parts per million by volume.

(2) Use the colorimetric detector tube according to the manufacturer's instructions.

(3) Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet or outlet.

(f) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the idling emission limit standards of § 63.463 (b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) shall comply with the requirements specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If using controls listed in paragraphs (a) through (e) of this section, the owner or operator shall comply with the monitoring frequency requirements in paragraphs (a) through (e) of this section.

(2) If using controls not listed in paragraphs (a) through (e) of this section, the owner or operator shall establish the monitoring frequency for each control and submit it to the Administrator for approval in the initial test report.

(g) Each owner or operator using a control device listed in paragraphs (a) through (e) of this section can use alternative monitoring procedures approved by the Administrator.

§ 63.467 Recordkeeping requirements.

(a) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.463 shall maintain records in written or electronic form specified in paragraphs (a)(1) through (a)(5) of this section for the lifetime of the machine.

(1) Owner's manuals, or if not available, written maintenance and operating procedures, for the solvent cleaning machine and control equipment.

(2) The date of installation for the solvent cleaning machine and all of its control devices. If the exact date for installation is not known, a letter certifying that the cleaning machine and its control devices were installed prior to, or on, November 29, 1993, or after November 29, 1993, may be substituted.

(3) If a dwell is used to comply with these standards, records of the tests required in § 63.465(d) to determine an appropriate dwell time for each part or parts basket.

(4) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the idling emission limit standards of § 63.463(b)(1)(ii), (b)(2)(ii), (c)(1)(ii), or (c)(2)(ii) shall maintain records of the initial performance test, including the idling emission rate and values of the monitoring parameters measured during the test.

(5) Records of the halogenated HAP solvent content for each solvent used in a solvent cleaning machine subject to the provisions of this subpart.

(b) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with § 63.463 shall maintain records specified in paragraphs (b)(1) through (b)(4) of this section either in electronic or written form for a period of 5 years.

(1) The results of control device monitoring required under § 63.466.

(2) Information on the actions taken to comply with § 63.463(e) and (f). This information shall include records of written or verbal orders for replacement parts, a description of the repairs made, and additional monitoring conducted to demonstrate that monitored parameters have returned to accepted levels.

(3) Estimates of annual solvent consumption for each solvent cleaning machine.

(4) If a carbon adsorber is used to comply with these standards, records of the date and results of the weekly measurement of the halogenated HAP solvent concentration in the carbon adsorber exhaust required in § 63.466(e).

(c) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.464 shall maintain records specified in paragraphs (c)(1) through (c)(3) of this section either in electronic or written form for a period of 5 years.

(1) The dates and amounts of solvent that are added to the solvent cleaning machine.

(2) The solvent composition of wastes removed from cleaning machines as determined using the procedure described in § 63.465(c)(2).

(3) Calculation sheets showing how monthly emissions and the rolling 3-month average emissions from the solvent cleaning machine were determined, and the results of all calculations.

(d) Each owner or operator of a solvent cleaning machine without a solvent/air interface complying with the provisions of § 63.464 shall maintain records on the method used to determine the cleaning capacity of the cleaning machine.

§ 63.468 Reporting requirements.

(a) Each owner or operator of an existing solvent cleaning machine subject to the provisions of this subpart shall submit an initial notification report to the Administrator no later than August 29, 1995. This report shall include the information specified in paragraphs (a)(1) through (a)(6) of this section.

(1) The name and address of the owner or operator.

(2) The address (i.e., physical location) of the solvent cleaning machine(s).

(3) A brief description of each solvent cleaning machine including machine type (batch vapor, batch cold, vapor in-line or cold in-line), solvent/air interface area, and existing controls.

(4) The date of installation for each solvent cleaning machine or a letter certifying that the solvent cleaning machine was installed prior to, or after, November 29, 1993.

(5) The anticipated compliance approach for each solvent cleaning machine.

(6) An estimate of annual halogenated HAP solvent consumption for each solvent cleaning machine.

(b) Each owner or operator of a new solvent cleaning machine subject to the provisions of this subpart shall submit an initial notification report to the Administrator. New sources for which construction or reconstruction had commenced and initial startup had not occurred before December 2, 1994, shall submit this report as soon as practicable before startup but no later than

January 31, 1995. New sources for which the construction or reconstruction commenced after December 2, 1994, shall submit this report as soon as practicable before the construction or reconstruction is planned to commence. This report shall include all of the information required in § 63.5(d)(1) of subpart A (General Provisions), with the revisions and additions in paragraphs (b)(1) through (b)(3) of this section.

(1) The report shall include a brief description of each solvent cleaning machine including machine type (batch vapor, batch cold, vapor in-line, or cold-line), solvent/air interface area, and existing controls.

(2) The report shall include the anticipated compliance approach for each solvent cleaning machine.

(3) In lieu of § 63.5(d)(1)(ii)(H) of subpart A of this part, the owner or operator must report an estimate of annual halogenated HAP solvent consumption for each solvent cleaning machine.

(c) Each owner or operator of a batch cold solvent cleaning machine subject to the provisions of this subpart shall submit a compliance report to the Administrator. For existing sources, this report shall be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d). For new sources, this report shall be submitted to the Administrator no later than 150 days after startup or May 1, 1995, whichever is later. This report shall include the requirements specified in paragraphs (c)(1) through (c)(4) of this section.

(1) The name and address of the owner or operator.

(2) The address (i.e., physical location) of the solvent cleaning machine(s).

(3) A statement, signed by the owner or operator of the solvent cleaning machine, stating that the solvent cleaning machine for which the report is being submitted is in compliance with the provisions of this subpart.

(4) The compliance approach for each solvent cleaning machine.

(d) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of

§ 63.463 shall submit to the Administrator an initial statement of compliance for each solvent cleaning machine. For existing sources, this report shall be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d). For new sources, this report shall be submitted to the Administrator no later than 150 days after startup or May 1, 1995, whichever is later. This statement shall include the requirements specified in paragraphs (d)(1) through (d)(6) of this section.

(1) The name and address of the owner or operator.

(2) The address (i.e., physical location) of the solvent cleaning machine(s).

(3) A list of the control equipment used to achieve compliance for each solvent cleaning machine.

(4) For each piece of control equipment required to be monitored, a list of the parameters that are monitored and the values of these parameters measured on or during the first month after the compliance date.

(5) Conditions to maintain the wind speed requirements of § 63.463(e)(2)(ii), if applicable.

(6) Each owner or operator of a solvent cleaning machine complying with the idling emission limit standards of § 63.463(b)(1)(ii), (b)(2)(ii), (c)(1)(ii), and (c)(2)(ii) shall submit a test report for tests of idling emissions meeting the specifications in Method 307 of appendix A to this subpart. This report shall comply with the requirements specified in paragraphs (d)(6)(i) through (d)(6)(iv) of this section.

(i) This test must be on the same specific model cleaner used at the source. The test can be done by the owner or operator of the affected machine or can be supplied by the vendor of that solvent cleaning machine or a third party.

(ii) This report must clearly state the monitoring parameters, monitoring frequency and the delineation of exceedances for each parameter.

(iii) If a solvent cleaning machine vendor or third party test report is used to demonstrate compliance, it shall include the following for the solvent cleaning machine tested: Name of person(s) or company that performed the test, model name, the date the sol-

vent cleaning machine was tested, serial number, and a diagram of the solvent cleaning machine tested.

(iv) If a solvent cleaning machine vendor or third party test report is used, the owner or operator of the solvent cleaning machine shall comply with the requirements specified in either paragraphs (d)(6)(iv)(A) and (d)(6)(iv)(B) of this section.

(A) Submit a statement by the solvent cleaning machine vendor that the unit tested is the same as the unit the report is being submitted for.

(B) Demonstrate to the Administrator's satisfaction that the solvent emissions from the solvent cleaning machine for which the test report is being submitted are equal to or less than the solvent emissions from the solvent cleaning machine in the vendor test report.

(7) If a carbon adsorber is used to comply with these standards, the date and results of the weekly measurement of the halogenated HAP solvent concentration in the carbon adsorber exhaust required in § 63.466(e).

(e) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.464 shall submit to the Administrator an initial statement of compliance for each solvent cleaning machine. For existing sources, this report shall be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d). For new sources, this report shall be submitted to the Administrator no later than 150 days after startup or May 1, 1995, whichever is later. The statement shall include the information specified in paragraphs (e)(1) through (e)(4) of this section.

(1) The name and address of the solvent cleaning machine owner or operator.

(2) The address of the solvent cleaning machine(s).

(3) The solvent/air interface area for each solvent cleaning machine or, for cleaning machines without a solvent/air interface, a description of the method used to determine the cleaning capacity and the results.

(4) The results of the first 3-month average emissions calculation.

(f) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.463 shall submit an annual report by February 1 of the year following the one for which the reporting is being made. This report shall include the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) A signed statement from the facility owner or his designee stating that, "All operators of solvent cleaning machines have received training on the proper operation of solvent cleaning machines and their control devices sufficient to pass the test required in § 63.463(d)(10)."

(2) An estimate of solvent consumption for each solvent cleaning machine during the reporting period.

(3) The reports required under paragraphs (f) and (g) of this section can be combined into a single report for each facility.

(g) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with the provisions of § 63.464 shall submit a solvent emission report every year. This solvent emission report shall contain the requirements specified in paragraphs (g)(1) through (g)(4) of this section.

(1) The size and type of each unit subject to this subpart (solvent/air interface area or cleaning capacity).

(2) The average monthly solvent consumption for the solvent cleaning machine in kilograms per month.

(3) The 3-month monthly rolling average solvent emission estimates calculated each month using the method as described in § 63.465(c).

(4) The reports required under paragraphs (f) and (g) of this section can be combined into a single report for each facility.

(h) Each owner or operator of a batch vapor or in-line solvent cleaning machine shall submit an exceedance report to the Administrator semiannually except when, the Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source or, an exceedance occurs. Once an exceedance has occurred the owner or operator shall follow a quarterly reporting format until a request to reduce reporting frequency

under paragraph (i) of this section is approved. Exceedance reports shall be delivered or postmarked by the 30th day following the end of each calendar half or quarter, as appropriate. The exceedance report shall include the applicable information in paragraphs (h) (1) through (3) of this section.

(1) Information on the actions taken to comply with § 63.463 (e) and (f). This information shall include records of written or verbal orders for replacement parts, a description of the repairs made, and additional monitoring conducted to demonstrate that monitored parameters have returned to accepted levels.

(2) If an exceedance has occurred, the reason for the exceedance and a description of the actions taken.

(3) If no exceedances of a parameter have occurred, or a piece of equipment has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.

(i) An owner or operator who is required to submit an exceedance report on a quarterly (or more frequent) basis may reduce the frequency of reporting to semiannual if the conditions in paragraphs (i)(1) through (i)(3) of this section are met.

(1) The source has demonstrated a full year of compliance without an exceedance.

(2) The owner or operator continues to comply with all relevant record-keeping and monitoring requirements specified subpart A (General Provisions) and in this subpart.

(3) The Administrator does not object to a reduced frequency of reporting for the affected source as provided in paragraph (e)(3)(iii) of subpart A (General Provisions).

(j) The Administrator has determined, pursuant to the criteria under section 502(a) of the Act, that an owner or operator of any batch cold solvent cleaning machine that is not itself a major source and that is not located at a major source, as defined under 40 CFR 70.2, is exempt from part 70 permitting requirements for that source.

An owner or operator of any other solvent cleaning machine subject to the provisions of this subpart is subject to part 70 permitting requirements, such sources, if not major or located at

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major sources, may be deferred by the State from part 70 permitting requirements for 5 years after the EPA first approves a part 70 program (i.e., until December 9, 1999). All sources receiving deferrals shall submit permit applications within 12 months of such date (by December 9, 2000).

(k) Each owner or operator of a solvent cleaning machine requesting an equivalency determination, as described in § 63.469 shall submit an equivalency request report to the Administrator. For existing sources, this report must be submitted to the Administrator no later than June 3, 1996. For new sources, this report must be submitted and approved by the Administrator prior to startup.

[59 FR 61805, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

§ 63.469 Equivalent methods of control.

Upon written application, the Administrator may approve the use of equipment or procedures after they have been satisfactorily demonstrated to be equivalent, in terms of reducing emissions of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride or chloroform to the atmosphere, to those prescribed for compliance within a specified paragraph of this subpart. The application must contain a complete description of the equipment or procedure and the proposed equivalency testing procedure and the date, time, and location scheduled for the equivalency demonstration.

§ 63.470 Stay of effective date.

Notwithstanding any other provision of this subpart, the effectiveness of §§ 63.460 thru 63.469 of subpart T is stayed until August 3, 1998 as applied to continuous web cleaning machines using halogenated HAP solvents.

[63 FR 24751, May 5, 1998]

APPENDIX A TO SUBPART T—TEST OF SOLVENT CLEANING PROCEDURES

General Questions

1. What is the maximum allowable speed for parts entry and removal?
 - A. 8.5 meters per minute (28 feet per minute).

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- B. 3.4 meters per minute (11 feet per minute).
 - C. 11 meters per minute (36 feet per minute).
 - D. No limit.

2. How do you ensure that parts enter and exit the solvent cleaning machine at the speed required in the regulation?

- A. Program on computerized hoist monitors speed.
 - B. Can judge the speed by looking at it.
 - C. Measure the time it takes the parts to travel a measured distance.

3. Identify the sources of air disturbances.

- A. Fans
 - B. Open doors
 - C. Open windows
 - D. Ventilation vents
 - E. All of the above

4. What are the three operating modes?

- A. Idling, working and downtime
 - B. Precleaning, cleaning, and drying
 - C. Startup, shutdown, off
 - D. None of the above

5. When can parts or parts baskets be removed from the solvent cleaning machine?

- A. When they are clean
 - B. At any time
 - C. When dripping stops
 - D. Either A or C is correct

6. How must parts be oriented during cleaning?

- A. It does not matter as long as they fit in the parts basket.
 - B. So that the solvent pools in the cavities where the dirt is concentrated.
 - C. So that solvent drains from them freely.

7. During startup, what must be turned on first, the primary condenser or the sump heater?

- A. Primary condenser
 - B. Sump heater
 - C. Turn both on at same time
 - D. Either A or B is correct

8. During shutdown, what must be turned off first, the primary condenser or the sump heater?

- A. Primary condenser
 - B. Sump heater
 - C. Turn both off at same time
 - D. Either A or B is correct

9. In what manner must solvent be added to and removed from the solvent cleaning machine?

- A. With leak proof couplings
 - B. With the end of the pipe in the solvent sump below the liquid solvent surface.
 - C. So long as the solvent does not spill, the method does not matter.
 - D. A and B

10. What must be done with waste solvent and still and sump bottoms?

- A. Pour down the drain
 - B. Store in closed container

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- C. Store in a bucket
D. A or B

____ 11. What types of materials are prohibited from being cleaned in solvent cleaning machines using halogenated HAP solvents?

- A. Sponges
B. Fabrics
C. Paper
D. All of the above

Control Device Specific Questions

[] Freeboard Refrigeration Device

____ 1. What temperature must the FRD achieve?

- A. Below room temperature
B. 50°F
C. Below the solvent boiling point
D. 30 percent below the solvent boiling point

[] Working-Mode Cover

____ 2. When can a cover be open?

- A. While parts are in the cleaning machine
B. During parts entry and removal
C. During maintenance
D. During measurements for compliance purposes
E. A and C
F. B, C, and D

____ 3. Covers must be maintained in what condition?

- A. Free of holes
B. Free of cracks

- C. So that they completely seal cleaner opening
D. All of the above

[] Dwell

____ 4. Where must the parts be held for the appropriate dwell time?

- A. In the vapor zone
B. In the freeboard area above the vapor zone
C. Above the cleaning machine
D. In the immersion sump

ANSWERS

General Questions

1. B
2. A or C
3. E
4. A
5. C
6. C
7. A
8. B
9. D
10. B
11. D

Control Device Specific Questions

1. D
2. F
3. D
4. B

[59 FR 61818, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T

Reference	Applies to subpart T		Comments
	BCC	BVI	
63.1(a) (1)–(3)	Yes	Yes	Subpart T (this appendix) specifies applicability of each paragraph in subpart A to subpart T.
63.1(a)(4)	Yes	Yes	
63.1(a)(5)	No	No	Subpart T allows submittal of notifications and reports through the U.S. mail, fax, and courier. Subpart T requires that the postmark for notifications and reports submitted through the U.S. mail or other non-Governmental mail carriers be on or before deadline specified in an applicable requirement.
63.1(a) (6)–(8)	Yes	Yes	
63.1(a)(9)	No	No	
63.1(a)(10)	Yes	Yes	
63.1(a)(11)	No	No	
63.1(a) (12)–(14) ..	Yes	Yes	Subpart T specifies applicability.
63.1(b)(1)	No	No	
63.1(b)(2)	No	Yes	Subpart T requires that a record of halogenated cleaning machine applicability determination be kept on site for 5 years, or until the cleaning machine changes its operations. The record shall be sufficiently detailed to allow the Administrator to make a finding about the source's applicability status with regard to subpart T.
63.1(b)(3)	No	No	
63.1(c)(1)	Yes	Yes	Subpart T, § 63.46(8)(h), indicates a Title V permit exemption for halogenated HAP batch cold solvent cleaning machines that are not major sources and not located at a major source. This section also specifies a deferral from the requirement of a Title V permit for owners or operators of solvent cleaning machines subject to subpart T provisions, other than halogenated HAP batch cold solvent cleaning machines, that are not major sources, and not located at a major source.
63.1(c)(2)	Yes	Yes	

APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T—Continued

Reference	Applies to subpart T		Comments
	BCC	BVI	
63.1(c)(3)	No	No	Subpart T does not require continuous monitoring systems (CMS) or continuous opacity monitoring systems. Therefore, notifications and requirements for CMS and COMS specified in subpart A do not apply to subpart T.
63.1(c)(4)	Yes	Yes	
63.1(c)(5)	Yes	Yes	
63.1(d)	No	No	Subpart T definitions (§63.461) for existing and new overlap with the definitions for existing source and new source in subpart A (§63.2). Both subpart A and T also define Administrator.
63.1(e)	No	Yes	
63.2	Yes	Yes	
63.3(a)–(c)	Yes	Yes	Subpart T overrides the requirement for approval prior to constructing a new or reconstructing an existing major source.
63.4(a) (1)–(3)	Yes	Yes	
63.4(a)(4)	No	No	
63.4(a)(5)	Yes	Yes	
63.4(b)–(c)	Yes	Yes	
63.5(a)(1)	Yes	Yes	
63.5(a)(2)	Yes	Yes	
63.5(b)(1)	Yes	Yes	
63.5(b)(2)	No	No	
63.5(b)(3)	No	No	
63.5(b)(4)–(6)	Yes	Yes	
63.5(c)	No	No	
63.5 (d)–(f)	No	No	Subpart T overrides the requirement to submit an application for approval of construction or reconstruction of a halogenated solvent cleaning machine.
63.6(a)	Yes	Yes	
63.6(b) (1)–(5)	Yes	Yes	Subpart T, §63.460, specifies compliance dates.
63.6(b)(6)	No	No	
63.6(b)(7)	No	No	Subpart T has the same requirements for affected halogenated HAP solvent cleaning machine subcategories that are located at area sources as it does for those located at major sources.
63.6(c)(1)–(2)	Yes	Yes	
63.6(c) (3)–(4)	No	No	Subpart T allows 3 years from the date of promulgation for both area and major existing sources to comply.
63.6(c)(5)	Yes	Yes	
63.6(d)	No	No	Subpart T has the same requirements for affected halogenated HAP solvent cleaning machine subcategories that are located at area sources as it does for those located at major sources.
63.6(e)(1)–(2)	Yes	Yes	
63.6(e)(3)	No	No	
63.6(f)–(g)	Yes	Yes	Subpart T overrides the requirement of a startup, shutdown, and malfunction plan. Subpart T specifies startup and shutdown procedures to be followed by an owner or operator for batch vapor and in-line cleaning machines.
63.6(h)	No	No	
63.6(i) (1)–(14)	Yes	Yes	Subpart T does not require compliance with an opacity or visible emission standard.
63.6(i)(15)	No	No	
63.6(i)(16)	Yes	Yes	Subpart T gives owners or operators the option to perform an idling emission performance test as a way of demonstrating compliance. Other options are also available that do not require a performance test.
63.6(j)	Yes	Yes	
63.7(a)	No	Yes	This is only required for those owners or operators that choose the idling emission standard as their compliance option.
63.7(b)	No	Yes	
63.7(c)(1)	No	Yes	This is only required for those owners or operators that choose the idling emission standard as their compliance option.
63.7(c) (2)–(3)	No	No	
63.7(c)(4)	No	No	Subpart T does not require a site-specific test plan for the idling emission performance test.
63.7(d)	No	No	
63.7(e)	No	Yes	Subpart T does not require a performance test that involves the retrieval of gas samples, and therefore this does not apply.
63.7(f)	No	Yes	

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APPENDIX B TO SUBPART T—GENERAL PROVISIONS APPLICABILITY TO SUBPART T—Continued

Reference	Applies to subpart T		Comments
	BCC	BVI	
63.7(g)	No	Yes	Subpart T specifies what is required to demonstrate idling emission standard compliance through the use of the Environmental Protection Agency test method 307 and control device monitoring. Reports and records of testing and monitoring are required for compliance verification. Three runs of the test are required for compliance, as specified in § 63.7(e) of subpart A.
63.7(h)	No	No	Subpart T does not require the use of a performance test to comply with the standard. The idling emission standard option (which requires an idling emission performance test) is an alternative option offered to owners or operators of batch vapor and in-line cleaning machines for compliance flexibility.
63.8 (a)–(b)	Yes	Yes	Subpart T does not require the use of continuous monitoring systems to demonstrate compliance.
63.8 (c)–(e)	No	No	
63.8(f)	Yes	Yes	Subpart T does not require continuous opacity monitoring systems and continuous monitoring systems data.
63.8(g)	No	No	
63.9(a) (1)–(4)	Yes	Yes	Subpart T includes all of those requirements stated in subpart A, except that subpart A also requires a statement as to whether the affected source is a major or an area source, and an identification of the relevant standard (including the source's compliance date). Subpart T also has some more specific information requirements specific to the affected source (see subpart T, §§ 63.468(a)–(b)).
63.9(b)(1)	Yes	Yes	
63.9(b)(2)	Yes	Yes	The subpart A and subpart T initial notification reports differ (see above). Subpart T does not require an application for approval of construction or reconstruction.
63.9(b)(3)	Yes	Yes	
63.9(b)(4)	No	No	Under subpart T, this requirement only applies to owners or operators choosing to comply with the idling emissions standard.
63.9(b)(5)	Yes	Yes	
63.9(c)	Yes	Yes	Subpart T does not require opacity or visible emission observations.
63.9(d)	Yes	Yes	
63.9(e)	Yes	Yes	Subpart T does not require the use of continuous monitoring systems or continuous opacity monitoring systems.
63.9(f)	No	No	
63.9(g)(1)	No	No	Section 63.468 of subpart T requires an initial statement of compliance for existing sources to be submitted to the Administrator no later than 150 days after the compliance date specified in § 63.460(d) of subpart T. For new sources, this report is to be submitted to the Administrator no later than 150 days from the date specified in § 63.460(c).
63.9(h)	No	No	
63.9(i)	Yes	Yes	Recordkeeping requirements are specified in subpart T. Subpart T does not require continuous monitoring systems.
63.9(j)	Yes	Yes	
63.10(a)	Yes	Yes	Reporting requirements are specified in subpart T. Subpart T does not require continuous emissions monitoring systems.
63.10(b)	No	No	
63.10(c) (1)–(15)	No	No	Subpart T does not require continuous monitoring systems.
63.10(d)(1)	Yes	Yes	
63.10(d)(2)	No	No	Subpart T does not require continuous opacity monitoring systems.
63.10(e) (1)–(2)	No	No	
63.10(e)(3)	No	No	Flares are not a control option under subpart T.
63.10(e)(4)	No	No	
63.10(f)	Yes	Yes	Subpart T requirements do not require the use of the test methods incorporated by reference in subpart A.
63.11(a)	Yes	Yes	
63.11(b)	No	No	
63.12 (a)–(c)	Yes	Yes	
63.13 (a)–(c)	Yes	Yes	
63.14	No	No	
63.15(a)–(b)	Yes	Yes	

BCC=Batch Cold Cleaning Machines.

BVI=Batch Vapor and In-line Cleaning Machines.

[59 FR 61818, Dec. 2, 1994; 60 FR 29485, June 5, 1995]

Subpart U—National Emission Standards for Hazardous Air Pollutant Emissions: Group I Polymers and Resins

SOURCE: 62 FR 46925, Sept. 5, 1996, unless otherwise noted.

§ 63.480 Applicability and designation of affected sources.

(a) *Definition of affected source.* The provisions of this subpart apply to each affected source. An affected source is either an existing affected source or a new affected source. Existing affected source is defined in paragraph (a)(1) of this section, and new affected source is defined in paragraph (a)(2) of this section. The affected source also includes all wastewater streams and wastewater operations associated with the elastomer product process unit(s) (EPPUs) included in the affected source.

(1) Except as specified in paragraphs (b) through (d) of this section, an existing affected source is defined as each group of one or more EPPUs that is not part of a new affected source, as defined in paragraph (a)(2) of this section, and that is manufacturing the same primary product and located at a plant site that is a major source.

(2) Except as specified in paragraphs (b) through (d) of this section, a new affected source is defined as a source meeting the criteria of paragraph (a)(2)(i), (a)(2)(ii), or (a)(2)(iii) of this section.

(i) At a plant site previously without HAP emission points, each group of one or more EPPUs manufacturing the same primary product that is part of a major source on which construction commenced after June 12, 1995,

(ii) An EPPU meeting the criteria in paragraph (i)(1)(i) of this section, or

(iii) A reconstructed affected source meeting the criteria in paragraph (i)(2)(i) of this section.

(b) *EPPUs exempted from the affected source.* EPPUs that do not use any organic HAP may be excluded from the affected source, provided that the owner or operator complies with the requirements of paragraphs (b)(1) and (b)(2) of this section, if requested to do so by the Administrator.

(1) Retain information, data, and analyses used to document the basis

for the determination that the EPPU does not use any organic HAP. Types of information that could document this determination include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, or engineering calculations.

(2) When requested by the Administrator, demonstrate that the EPPU does not use any organic HAP.

(c) *Emission points exempted from the affected source.* The affected source does not include the emission points listed in paragraphs (c)(1) through (c)(6) of this section:

(1) Stormwater from segregated sewers;

(2) Water from fire-fighting and deluge systems in segregated sewers;

(3) Spills;

(4) Water from safety showers;

(5) Vessels and equipment storing and/or handling material that contains no organic HAP or organic HAP as impurities only; and

(6) Equipment that is intended to operate in organic HAP service for less than 300 hours during the calendar year.

(d) *Processes exempted from the affected source.* The processes specified in paragraphs (d)(1) through (d)(3) of this section are not part of the affected source.

(1) Research and development facilities;

(2) Equipment that is located within an EPPU that is subject to this subpart but does not contain organic HAP; and

(3) Solvent reclamation, recovery, or recycling operations at hazardous waste treatment, storage, and disposal facilities (TSDF) requiring a permit under 40 CFR part 270 that are separate entities and not part of an EPPU to which this subpart applies.

(e) *Applicability determination of elastomer equipment included in a process unit producing a non-elastomer product.* If an elastomer product that is subject to this subpart is produced within a process unit that is subject to subpart V of this part, and at least 50 percent of the elastomer is used in the production of the product manufactured by the subpart V process unit, the unit operations involved in the production of the elastomer are considered part of

the process unit that is subject to subpart V, and not this subpart.

(f) *Primary product determination and applicability.* The primary product of a process unit shall be determined according to the procedures specified in paragraphs (f)(1) and (f)(2) of this section. Paragraphs (f)(3) through (f)(4) of this section describe whether or not a process unit is subject to this subpart. Paragraphs (f)(5) through (f)(7) of this section discuss compliance for those EPPUs operated as flexible operation units, as specified in paragraph (f)(2) of this section.

(1) If a process unit only manufactures one product, then that product shall represent the primary product of the process unit.

(2) If a process unit is designed and operated as a flexible operation unit, the primary product shall be determined as specified in paragraphs (f)(2)(i) or (f)(2)(ii) of this section based on the anticipated operations for the 5 years following September 5, 1996 for existing affected sources and for the first 5 years after initial startup for new affected sources.

(i) If the flexible operation unit will manufacture one product for the greatest operating time over the five-year period, then that product shall represent the primary product of the flexible operation unit.

(ii) If the flexible operation unit will manufacture multiple products equally based on operating time, then the product with the greatest production on a mass basis over the five-year period shall represent the primary product of the flexible operation unit.

(3) If the primary product of a process unit is an elastomer product, then that process unit is considered an EPPU. If that EPPU meets all the criteria of paragraph (a) of this section, it is either an affected source or is part of an affected source comprised of other EPPU subject to this rule at the same plant site with the same primary product. The status of a process unit as an EPPU, and as an affected source or part of an affected source shall not change regardless of what products are produced in the future by the EPPU, with the exception noted in paragraph (f)(3)(i) of this section.

(i) If a process unit terminates the production of all elastomer products and does not anticipate the production of any elastomer product in the future, the process unit is no longer an EPPU and is not subject to the provisions of this subpart after notification is made as specified in paragraph (f)(3)(ii) of this section.

(ii) The owner or operator of a process unit that wishes to remove the EPPU designation from the process unit, as specified in paragraph (f)(3)(i) of this section, shall notify the Administrator. This notification shall be accompanied by rationale for why it is anticipated that no elastomer products will be produced in the process unit in the future.

(iii) If a process unit meeting the criteria of paragraph (f)(3)(i) of this section begins the production of an elastomer product in the future, the owner or operator shall use the procedures in paragraph (f)(4)(i) of this section to determine if the process unit is re-designated as an EPPU.

(4) If the primary product of a process unit is not an elastomer product, then that process unit is not an affected source, nor is it part of any affected source subject to this rule. The process unit is not subject to this rule at any time, regardless of what product is being produced. The status of the process unit as not being an EPPU, and therefore not being an affected source or part of an affected source subject to this subpart, shall not change regardless of what products are produced in the future by the EPPU, with the exception noted in paragraph (f)(4)(i) of this section.

(i) If, at any time beginning September 5, 2001, the owner or operator determines that an elastomer product is the primary product for the process unit based on actual production data for any preceding consecutive five-year period, then the process unit shall be classified as an EPPU. If an EPPU meets all the criteria in paragraph (a) of this section, it is either an affected source or part of an affected source and shall be subject to this rule.

(ii) If a process unit meets the criteria of paragraph (f)(4)(i) of this section, the owner or operator shall notify the Administrator within 6 months of

making this determination. The EPPU, as the entire affected source or part of an affected source, shall be in compliance with the provisions of this rule within 3 years from the date of such notification.

(iii) If a process unit is re-designated as an EPPU but does not meet all the criteria of paragraph (a) of this section, the owner or operator shall notify the Administrator within 6 months of making this determination. This notification shall include documentation justifying the EPPU's status as not being an affected source or not being part of an affected source.

(5) Once the primary product of a process unit has been determined to be an elastomer product and it has been determined that all the criteria of paragraph (a) of this section are met for the EPPU, the owner or operator of the affected source shall comply with the standards for the primary product. Owners or operators of flexible operation units shall comply with the standards for the primary product as specified in either paragraph (f)(5)(i) or (f)(5)(ii) of this section, except as specified in paragraph (f)(5)(iii) of this section.

(i) Each owner or operator shall determine the group status of each emission point that is part of that flexible operation unit based on emission point characteristics when the primary product is being manufactured. Based on this finding, the owner or operator shall comply with the applicable standards for the primary product for each emission point, as appropriate, at all times, regardless of what product is being produced.

(ii) Alternatively, each owner or operator shall determine the group status of each emission point that is part of the flexible operation unit based on the emission point characteristics when each product produced by the flexible operation unit is manufactured, regardless of whether the product is an elastomer product or not. Based on these findings, the owner or operator shall comply with the applicable standards, as appropriate, regardless of what product is being produced.

NOTE: Under this scenario, it is possible that the group status, and therefore the requirement to achieve emission reductions,

for an emission point may change depending on the product being manufactured.]

(iii) Whenever a flexible operation unit manufactures a product that meets the criteria of paragraph (b) of this section (i.e., does not use or produce any organic HAP), all activities associated with the manufacture of the product, including the operation and monitoring of control or recovery devices, shall be exempt from the requirements of this rule.

(6) The determination of the primary product for a process unit, to include the determination of applicability of this subpart to process units that are designed and operated as flexible operation units, shall be reported in the Notification of Compliance Status required by §63.506(e)(5) when the primary product is determined to be an elastomer product. The Notification of Compliance Status shall include the information specified in either paragraph (e)(6)(i) or (e)(6)(ii) of this section. If the primary product is determined to be something other than an elastomer product, the owner or operator shall retain information, data, and analysis used to document the basis for the determination that the primary product is not an elastomer product.

(i) If the EPPU manufactures only one elastomer product, identification of that elastomer product.

(ii) If the EPPU is designed and operated as a flexible operation unit, the information specified in paragraphs (f)(6)(ii)(A) through (f)(6)(ii)(C) of this section, as appropriate.

(A) Identification of the primary product.

(B) Information concerning operating time and/or production mass for each product that was used to make the determination of the primary product under paragraph (f)(2)(i) or (f)(2)(ii) of this section.

(C) Identification of which compliance option, either paragraph (f)(5)(i) or (f)(5)(ii) of this section, has been selected by the owner or operator.

(7) To demonstrate compliance with the rule during those periods when a flexible operation unit that is subject to this subpart is producing a product other than an elastomer product or is producing an elastomer product that is not the primary product, the owner or

operator shall comply with either paragraphs (f)(7)(i) and (f)(7)(ii) or paragraph (f)(7)(iii) of this section.

(i) Establish parameter monitoring levels as specified in § 63.505, for those emission points designated as Group 1, as appropriate.

(ii) Submit the parameter monitoring levels developed under paragraph (f)(7)(i) of this section and the basis for them in the Notification of Compliance Status report, as specified in § 63.506(e)(5).

(iii) Demonstrate that the parameter monitoring levels established for the primary product are also appropriate for those periods when products other than the primary product are being produced. Material demonstrating this finding shall be submitted in the Notification of Compliance Status report as specified in § 63.506(e)(5).

(g) *Storage vessel ownership determination.* The owner or operator shall follow the procedures specified in paragraphs (g)(1) through (g)(8) of this section to determine to which process unit a storage vessel shall belong.

(1) If a storage vessel is already subject to another subpart of 40 CFR part 63 on September 5, 1996, that storage vessel shall belong to the process unit subject to the other subpart.

(2) If a storage vessel is dedicated to a single process unit, the storage vessel shall belong to that process unit.

(3) If a storage vessel is shared among process units, then the storage vessel shall belong to that process unit located on the same plant site as the storage vessel that has the greatest input into or output from the storage vessel (i.e., the process unit has the predominant use of the storage vessel).

(4) If predominant use cannot be determined for a storage vessel that is shared among process units and if only one of those process units is an EPPU subject to this subpart, the storage vessel shall belong to that EPPU.

(5) If predominant use cannot be determined for a storage vessel that is shared among process units and if more than one of the process units are EPPUs that have different primary products and that are subject to this subpart, then the owner or operator shall assign the storage vessel to any

one of the EPPUs sharing the storage vessel.

(6) If the predominant use of a storage vessel varies from year to year, then predominant use shall be determined based on the utilization that occurred during the year preceding September 5, 1996 or based on the expected utilization for the 5 years following September 5, 1996 for existing affected sources, whichever is more representative of the expected operations for that storage vessel, and based on the expected utilization for the 5 years after initial startup for new affected sources. The determination of predominant use shall be reported in the Notification of Compliance Status required by § 63.506(e)(5)(vii). If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(7) If the storage vessel begins receiving material from (or sending material to) another process unit; ceases to receive material from (or send material to) a process unit; or if the applicability of this subpart to a storage vessel has been determined according to the provisions of paragraphs (g)(1) through (g)(6) of this section and there is a significant change in the use of the storage vessel that could reasonably change the predominant use, the owner or operator shall reevaluate the applicability of this subpart to the storage vessel.

(8) Where a storage vessel is located at a major source that includes one or more process units which place material into, or receive materials from the storage vessel, but the storage vessel is located in a tank farm, the applicability of this subpart shall be determined according to the provisions in paragraphs (g)(8)(i) through (g)(8)(iv) of this section.

(i) The storage vessel may only be assigned to a process unit that utilizes the storage vessel and does not have an intervening storage vessel for that product (or raw materials, as appropriate). With respect to any process unit, an intervening storage vessel means a storage vessel connected by hard-piping to the process unit and to the storage vessel in the tank farm so that product or raw material entering or leaving the process unit flows into

(or from) the intervening storage vessel and does not flow directly into (or from) the storage vessel in the tank farm.

(ii) If there is no process unit at the major source that meets the criteria of paragraph (g)(8)(i) of this section with respect to a storage vessel, this subpart does not apply to the storage vessel.

(iii) If there is only one process unit at the major source that meets the criteria of paragraph (g)(8)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to that process unit. Applicability of this subpart to the storage vessel shall then be determined according to the provisions of paragraph (a) of this section.

(iv) If there are two or more process units at the major source that meet the criteria of paragraph (g)(8)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to one of those process units according to the provisions of paragraph (g)(6) of this section. The predominant use shall be determined among only those process units that meet the criteria of paragraph (g)(8)(i) of this section.

(h) *Recovery operation equipment ownership determination.* The owner or operator shall follow the procedures specified in paragraphs (h)(1) through (h)(7) of this section to determine to which process unit recovery operation equipment shall belong.

(1) If recovery operation equipment is already subject to another subpart of 40 CFR part 63 on September 5, 1996, that recovery operation equipment shall belong to the process unit subject to the other subpart.

(2) If recovery operation equipment is used exclusively by a single process unit, the recovery operation shall belong to that process unit.

(3) If recovery operation equipment is shared among process units, then the recovery operation equipment shall belong to that process unit located on the same plant site as the recovery operation equipment that has the greatest input into or output from the recovery operation equipment (i.e., that process unit has the predominant use of the recovery operation equipment).

(4) If predominant use cannot be determined for recovery operation equip-

ment that is shared among process units and if one of those process units is an EPPU subject to this subpart, the recovery operation equipment shall belong to the EPPU subject to this subpart.

(5) If predominant use cannot be determined for recovery operation equipment that is shared among process units and if more than one of the process units are EPPUs that have different primary products and that are subject to this subpart, then the owner or operator shall assign the recovery operation equipment to any one of those EPPUs.

(6) If the predominant use of recovery operation equipment varies from year to year, then the predominant use shall be determined based on the utilization that occurred during the year preceding September 5, 1996 or based on the expected utilization for the 5 years following September 5, 1996 for existing affected sources, whichever is the more representative of the expected operations for the recovery operations equipment, and based on the expected utilization for the first 5 years after initial startup for new affected sources. This determination shall be reported in the Notification of Compliance Status required by § 63.506(e)(5)(viii). If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(7) If there is an unexpected change in the utilization of recovery operation equipment that could reasonably change the predominant use, the owner or operator shall redetermine to which process unit the recovery operation belongs by reperforming the procedures specified in paragraphs (h)(2) through (h)(6) of this section.

(i) *Changes or additions to plant sites.* The provisions of paragraphs (i)(1) through (i)(4) of this section apply to owners or operators that change or add to their plant site or affected source. Paragraph (i)(5) provides examples of what are and are not considered process changes for purposes of paragraph (i) of this section.

(1) *Adding an EPPU to a plant site.* The provisions of paragraphs (i)(1)(i) through (i)(1)(ii) of this section apply to owners or operators that add EPPUs to a plant site.

(i) If an EPPU is added to a plant site, the addition shall be a new affected source and shall be subject to the requirements for a new affected source in this subpart upon initial startup or by September 5, 1996, whichever is later, if the addition meets the criteria specified in paragraphs (i)(1)(i)(A) through (i)(1)(i)(B) and either (i)(1)(i)(C) or (i)(1)(i)(D) of this section:

(A) It is an addition that meets the definition of construction in § 63.2 of subpart A;

(B) Such construction commenced after June 12, 1995; and

(C) The addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP, and the primary product of the addition is currently produced at the plant site as the primary product of an affected source; or

(D) The primary product of the addition is not currently produced at the plant site as the primary product of an affected source, and the plant site meets, or after the addition is constructed will meet, the definition of a major source in § 63.2 of subpart A.

(ii) If an EPPU is added to a plant site, the addition shall be subject to the requirements for an existing affected source in this subpart upon initial startup or by 3 years after September 5, 1996, whichever is later, if the addition does not meet the criteria specified in paragraph (i)(1)(i) of this section and the plant site meets, or after the addition is completed will meet, the definition of major source.

(2) *Adding emission points or making process changes to existing affected sources.* The provisions of paragraphs (i)(2)(i) through (i)(2)(ii) of this section apply to owners or operators that add emission points or make process changes to an existing affected source.

(i) If any process change is made or emission point is added to an existing affected source, or if a process change creating one or more additional Group 1 emission point(s) is made to an existing affected source, the entire affected source shall be a new affected source and shall be subject to the requirements for a new affected source in this subpart upon initial startup or by September 5, 1996, whichever is later, if the

process change or addition meets the criteria specified in paragraphs (i)(2)(i)(A) through (i)(2)(i)(B) of this section:

(A) It is a process change or addition that meets the definition of reconstruction in § 63.2 of subpart A; and

(B) Such reconstruction commenced after June 12, 1995.

(ii) If any process change is made or emission point is added to an existing affected source, or if a process change creating one or more additional Group 1 emission point(s) is made to an existing affected source and the process change or addition does not meet the criteria specified in paragraphs (i)(2)(i)(A) and (i)(2)(i)(B) of this section, the resulting emission point(s) shall be subject to the requirements for an existing affected source in this subpart. The resulting emission point(s) shall be in compliance upon initial startup or by 3 years after September 5, 1996, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the process change or addition. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (i)(2)(iii)(A) through (i)(2)(iii)(C) of this section to establish a compliance date.

(iii) To establish a compliance date for an emission point or points specified in paragraph (i)(2)(ii) of this section, the procedures specified in paragraphs (i)(2)(iii)(A) through (i)(2)(iii)(C) of this section shall be followed.

(A) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(B) The compliance schedule shall be submitted within 180 days after the process change or addition is made or the information regarding the change or addition is known to the owner or operator, unless the compliance schedule has been previously submitted to the permitting authority. The compliance schedule may be submitted in the next Periodic Report if the process change or addition is made after the date the Notification of Compliance Status report is due.

(C) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

(3) *Existing source requirements for Group 2 emission points that become Group 1 emission points.* If a process change or addition that does not meet the criteria in paragraph (i)(1) or (i)(2) of this section is made to an existing plant site or existing affected source, and the change causes a Group 2 emission point to become a Group 1 emission point, for that emission point the owner or operator shall comply with the requirements of this subpart for existing Group 1 emission points. Compliance shall be achieved as expeditiously as practicable, but in no event later than 3 years after the emission point becomes a Group 1 emission point.

(4) *Existing source requirements for some emission points that become subject to subpart H requirements.* If a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, the owner or operator shall be in compliance upon initial startup or by 3 years after September 5, 1996, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (i)(2)(iii)(A) through (i)(2)(iii)(C) of this section to establish a compliance date.

(5) *Determining what are and are not process changes.* For purposes of paragraph (i) of this section, examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is a replacement, removal, or addition of recovery equipment. For purposes of paragraph (i) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status report required by § 63.506(e)(5).

(j) *Applicability of this subpart except during periods of startup, shutdown, and malfunction.* Each provision set forth in this subpart or referred to in this subpart shall apply at all times except during periods of startup, shutdown, and malfunction if the startup, shutdown, or malfunction precludes the ability of a particular emission point at an affected source to comply with one or more specific provisions to which it is subject.

§ 63.481 Compliance schedule and relationship to existing applicable rules.

(a) Affected sources are required to achieve compliance on or before the dates specified in paragraphs (b) through (d) of this section. Paragraph (e) of this section provides information on requesting compliance extensions. Paragraphs (f) through (i) of this section discuss the relationship of this subpart to subpart A and to other applicable rules. Where an override of another authority of the Act is indicated in this subpart, only compliance with the provisions of this subpart is required. Paragraph (j) of this section specifies the meaning of time periods.

(b) New affected sources that commence construction or reconstruction after June 12, 1995 shall be in compliance with this subpart upon initial startup or September 5, 1996, whichever is later, as provided in § 63.6(b) of subpart A.

(c) Existing affected sources shall be in compliance with this subpart (except for § 63.502 for which compliance is covered by paragraph (d) of this section) no later than 3 years after September 5, 1996, as provided in § 63.6(c) of subpart A, unless an extension has been granted as specified in paragraph (e) of this section.

(d) Except as provided for in paragraphs (d)(1) through (d)(6) of this section, existing affected sources shall be in compliance with § 63.502 no later than July 31, 1997, unless an extension has been granted pursuant to section 112(i)(3)(B) of the Act, as discussed in paragraph § 63.182(a)(6) of subpart H.

(1) Compliance with the compressor provisions of § 63.164 of subpart H shall occur no later than September 5, 1997 for any compressor meeting one or

more of the criteria in paragraphs (d)(1)(i) through (d)(1)(iii) of this section, if the work can be accomplished without a process unit shutdown, as defined in § 63.161 of subpart H.

(i) The seal system will be replaced;

(ii) A barrier fluid system will be installed; or

(iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system.

(2) Compliance with the compressor provisions of § 63.164 of subpart H shall occur no later than March 5, 1998, for any compressor meeting all the criteria in paragraphs (d)(2)(i) through (d)(2)(iv) of this section.

(i) The compressor meets one or more of the criteria specified in paragraphs (d)(1)(i) through (d)(1)(iii) of this section;

(ii) The work can be accomplished without a process unit shutdown as defined in § 63.161 of subpart H;

(iii) The additional time is actually necessary, due to the unavailability of parts beyond the control of the owner or operator; and

(iv) The owner or operator submits the request for a compliance extension to the U.S. Environmental Protection Agency (EPA) Regional Office at the addresses listed in § 63.13 of subpart A no later than June 16, 1997. The request for a compliance extension shall contain the information specified in § 63.6(i)(6)(i)(A), (B), and (D) of subpart A. Unless the EPA Regional Office objects to the request for a compliance extension within 30 calendar days after receipt of the request, the request shall be deemed approved.

(3) If compliance with the compressor provisions of § 63.164 of subpart H cannot reasonably be achieved without a process unit shutdown, as defined in § 63.161 of subpart H, the owner or operator shall achieve compliance no later than September 8, 1998. The owner or operator who elects to use this provision shall submit a request for an extension of compliance in accordance with the requirements of paragraph (d)(2)(iv) of this section.

(4) Compliance with the compressor provisions of § 63.164 of subpart H shall occur no later than September 6, 1999 for any compressor meeting one or more of the criteria in paragraphs

(d)(4)(i) through (d)(4)(iii) of this section. The owner or operator who elects to use these provisions shall submit a request for an extension of compliance in accordance with the requirements of paragraph (d)(2)(iv) of this section.

(i) Compliance cannot be achieved without replacing the compressor;

(ii) Compliance cannot be achieved without recasting the distance piece; or

(iii) Design modifications are required to connect to a closed-vent or recovery system.

(5) Compliance with the surge control vessel and bottoms receiver provisions of § 63.170 of subpart H shall occur no later than September 6, 1999.

(6) Compliance with the heat exchange system provisions of § 63.104 of subpart F, as required in § 63.502(f), shall occur no later than September 5, 1999.

(e) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the existing source up to 1 additional year to comply with section 112(d) standards. For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application or to the Administrator as a separate submittal or as part of the Precompliance Report. Requests for extensions shall be submitted no later than the date on which the Precompliance Report is required to be submitted in § 63.506(e)(3)(i). The dates specified in § 63.6(i) of subpart A for submittal of requests for extensions shall not apply to this subpart.

(1) A request for an extension of compliance shall include the data described in § 63.6(i)(6)(i) (A), (B), and (D) of subpart A.

(2) The requirements in § 63.6(i)(8) through § 63.6(i)(14) of subpart A shall govern the review and approval of requests for extensions of compliance with this subpart.

(f) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of affected sources subject to this subpart. For the purposes of this subpart, Table 3 of subpart F is not applicable.

(g) Table 2 of this subpart summarizes the provisions of subparts F, G, and H that apply and those that do not apply to owners and operators of affected sources subject to this subpart.

(h)(1) After the compliance dates specified in this section, an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 63, subpart I, is required to comply only with the provisions of this subpart.

(2) Sources subject to 40 CFR part 63, subpart I that have elected to comply through a quality improvement program, as specified in § 63.175 or § 63.176 or both of subpart H, may elect to continue these programs without interruption as a means of complying with this subpart. In other words, becoming subject to this subpart does not restart or reset the “compliance clock” as it relates to reduced burden earned through a quality improvement program.

(i) After the compliance dates specified in this section, a storage vessel that belongs to an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart Kb is required to comply only with the provisions of this subpart. After the compliance dates specified in paragraph (d) of this section, that storage vessel shall no longer be subject to 40 CFR part 60, subpart Kb.

(j) All terms in this subpart that define a period of time for completion of required tasks (e.g., monthly, quarterly, annual), unless specified otherwise in the section or subsection that imposes the requirement, refer to the standard calendar periods.

(1) Notwithstanding time periods specified in this subpart for completion of required tasks, such time periods may be changed by mutual agreement between the owner or operator and the Administrator, as specified in subpart A of this part (e.g., a period could begin on the compliance date or another date, rather than on the first day of the standard calendar period). For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.

(2) Where the period specified for compliance is a standard calendar pe-

riod, if the initial compliance date occurs after the beginning of the period, compliance shall be required according to the schedule specified in paragraphs (j)(2)(i) or (j)(2)(ii) of this section, as appropriate.

(i) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs, if there remain at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or

(ii) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.

(3) In all instances where a provision of this subpart requires completion of a task during each multiple successive period, an owner or operator may perform the required task at any time during the specified period, provided that the task is conducted at a reasonable interval after completion of the task during the previous period.

[62 FR 46925, Sept. 5, 1996, as amended at 62 FR 1837, Jan. 14, 1997]

§ 63.482 Definitions.

(a) The following terms used in this subpart shall have the meaning given them in subparts A (§ 63.2), F (§ 63.101), G (§ 63.111), and H (§ 63.161) as specified after each term:

Act (subpart A)
Administrator (subpart A)
Automated monitoring and recording system (subpart G)
Average concentration (subpart G)
Boiler (subpart G)
Bottoms receiver (subpart H)
By compound (subpart G)
By-product (subpart F)
Car-seal (subpart G)
Chemical manufacturing process unit (subpart F)
Closed-vent system (subpart G)
Co-product (subpart F)
Combustion device (subpart G)
Commenced (subpart A)
Compliance date (subpart A)
Compliance schedule (subpart A)
Connector (subpart H)
Construction (subpart A)

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Continuous monitoring system (subpart A)	Reference control technology for storage vessels (subpart G)
Continuous record (subpart G)	Reference control technology for wastewater (subpart G)
Continuous recorder (subpart G)	Relief valve (subpart G)
Cover (subpart G)	Research and development facility (subpart F)
Distillation unit (subpart G)	Residual (subpart G)
Emission standard (subpart A)	Run (subpart A)
Emissions averaging (subpart A)	Secondary fuel (subpart G)
EPA (subpart A)	Sensor (subpart H)
Equipment (subpart H)	Shutdown (subpart A)
Equipment leak (subpart F)	Specific gravity monitoring device (subpart G)
Existing source (subpart A)	Startup (subpart A)
External floating roof (subpart G)	Startup, shutdown, and malfunction plan (subpart F)
Fill (subpart G)	State (subpart A)
Fixed roof (subpart G)	Surge control vessel (subpart H)
Flame zone (subpart G)	Temperature monitoring device (subpart G)
Flexible operation unit (subpart F)	Test method (subpart A)
Floating roof (subpart G)	Total resource effectiveness index value (subpart G)
Flow indicator (subpart G)	Treatment process (subpart G)
Halogens and hydrogen halides (subpart G)	Unit operation (subpart F)
Hazardous air pollutant (subpart A)	Vent stream (subpart G)
Heat exchange system (subpart F)	Visible emission (subpart A)
Impurity (subpart F)	Waste management unit (subpart G)
Incinerator (subpart G)	Wastewater (subpart F)
In organic hazardous air pollutant service (subpart H)	Wastewater stream (subpart G)
Instrumentation system (subpart H)	(b) All other terms used in this subpart shall have the meaning given them in this section. If a term is defined in a subpart referenced above and in this section, it shall have the meaning given in this section for purposes of this subpart.
Internal floating roof (subpart G)	<i>Affected source</i> is defined in § 63.480(a).
Lesser quantity (subpart A)	<i>Aggregate batch vent stream</i> means a gaseous emission stream containing only the exhausts from two or more batch front-end process vents that are ducted together before being routed to a control device that is in continuous operation.
Maintenance wastewater (subpart F)	<i>Average flow rate</i> , as used in conjunction with wastewater provisions, is defined in and determined by the specifications in § 63.144(c) of subpart G; or, as used in conjunction with the batch front-end process vent provisions, is defined in and determined by the specifications in § 63.488(e).
Major source (subpart A)	<i>Back-end</i> refers to the unit operations in an EPPU following the stripping operations. Back-end process operations include, but are not limited to,
Malfunction (subpart A)	
Mass flow rate (subpart G)	
Maximum true vapor pressure (subpart G)	
New source (subpart A)	
Open-ended valve or line (subpart H)	
Operating permit (subpart F)	
Organic HAP service (subpart H)	
Organic monitoring device (subpart G)	
Owner or operator (subpart A)	
Performance evaluation (subpart A)	
Performance test (subpart A)	
Permitting authority (subpart A)	
Plant site (subpart F)	
Point of generation (subpart G)	
Potential to emit (subpart A)	
Primary fuel (subpart G)	
Process heater (subpart G)	
Process unit shutdown (subpart H)	
Process wastewater (subpart F)	
Process wastewater stream (subpart G)	
Product separator (subpart F)	
Reactor (subpart G)	
Reconstruction (subpart A)	
Recovery device (subpart G)	
Reference control technology for process vents (subpart G)	

filtering, coagulation, blending, concentration, drying, separating, and other finishing operations, as well as latex and crumb storage.

Batch cycle means the operational step or steps, from start to finish, that occur as part of a batch unit operation.

Batch cycle limitation means an enforceable restriction on the number of batch cycles that can be performed in a year for an individual batch front-end process vent.

Batch emission episode means a discrete emission venting episode associated with a single batch unit operation. Multiple batch emission episodes may occur from a single batch unit operation.

Batch front-end process vent means a point of emission from a batch unit operation having a gaseous emission stream with annual organic HAP emissions greater than 225 kilograms per year and located in the front-end of a process unit. Batch front-end process vents exclude relief valve discharges and leaks from equipment regulated under § 63.502.

Batch process means a discontinuous process involving the bulk movement of material through sequential manufacturing steps. Mass, temperature, concentration, and other properties of the process vary with time. Addition of raw material and withdrawal of product do not typically occur simultaneously in a batch process. For the purposes of this subpart, a process producing polymers is characterized as continuous or batch based on the operation of the polymerization reactors.

Batch unit operation means a unit operation operated in a batch process mode.

Butyl rubber means a copolymer of isobutylene and other monomers. Typical other monomers include isoprene and methylstyrenes. A typical composition of butyl rubber is approximately 85 to 99 percent isobutylene and one to fifteen percent other monomers. Most butyl rubber is produced by precipitation polymerization, although other methods may be used.

Compounding unit means a unit of operation which blends, melts, and re-solidifies solid polymers for the purpose of incorporating additives, colorants, or stabilizers into the final

elastomer product. A unit operation whose primary purpose is to remove residual monomers from polymers is not a compounding unit.

Continuous front-end process vent means a point of emission from a continuous process unit operation within an affected source having a gaseous emission stream with a flow rate greater than or equal to 0.005 standard cubic meter per minute and with a total organic HAP concentration greater than or equal to 50 parts per million by volume. Continuous front-end process vents exclude relief valve discharges and leaks from equipment regulated under § 63.502.

Continuous process means a process where the inputs and outputs flow continuously through sequential manufacturing steps throughout the duration of the process. Continuous processes typically approach steady-state conditions. Continuous processes typically involve the simultaneous addition of raw material and withdrawal of product. For the purposes of this subpart, a process producing polymers is characterized as continuous or batch based on the operation of the polymerization reactors.

Continuous unit operation means a unit operation operated in a continuous process mode.

Control device is defined in § 63.111 of subpart G, except that the term "process vent" shall be replaced with the term "continuous front-end process vent" for the purpose of this subpart.

Crumb rubber dry weight means the weight of the polymer, minus the weight of water and residual organics.

Drawing unit means a unit operation which converts polymer into a different shape by melting or mixing the polymer and then pulling it through an orifice to create a continuously extruded product.

Elastomer means any polymer having a glass transition temperature lower than -10°C , or a glass transition temperature between -10°C and 25°C that is capable of undergoing deformation (stretching) of several hundred percent and recovering essentially when the stress is removed. For the purposes of this subpart, resins are not considered to be elastomers.

Elastomer product means one of the following 12 types of products, as they are defined in this section:

- (1) Butyl Rubber,
- (2) Halobutyl Rubber,
- (3) Epichlorohydrin Elastomers,
- (4) Ethylene Propylene Rubber,
- (5) Hypalon™,
- (6) Neoprene,
- (7) Nitrile Butadiene Rubber,
- (8) Nitrile Butadiene Latex,
- (9) Polybutadiene Rubber/Styrene Butadiene Rubber by Solution,
- (10) Polysulfide Rubber,
- (11) Styrene Butadiene Rubber by Emulsion, and
- (12) Styrene Butadiene Latex.

Elastomer product process unit (EPPU) means a collection of equipment assembled and connected by pipes or ducts used to process raw materials and to manufacture an elastomer product as its primary product. This collection of equipment includes process vents; storage vessels, as determined in § 63.480(g); and the equipment (i.e., pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers that are associated with the elastomer product process unit) that are subject to the equipment leak provisions as specified in § 63.502. Compounding units, spinning units, drawing units, extruding units, and other finishing steps are not part of an EPPU. In addition, a solid state polymerization unit is not part of an EPPU.

Elastomer type means one of the elastomers defined under "elastomer product" in this section. Each elastomer identified in that definition represents a different elastomer type.

Emission point means an individual continuous front-end process vent, batch front-end process vent, back-end process vent, storage vessel, wastewater stream, or equipment leak.

Emulsion process means a process carried out with the reactants in an emulsified form (e.g., polymerization reaction).

Epichlorohydrin elastomer means an elastomer formed from the polymerization or copolymerization of epichlorohydrin (EPI). The main epichlorohydrin elastomers are

polyepichlorohydrin, epi-ethylene oxide (EO) copolymer, epi-allyl glycidyl ether (AGE) copolymer, and epi-EO-AGE terpolymer. Epoxy resins produced by the copolymerization of EPI and bisphenol A are not epichlorohydrin elastomers.

Ethylene-propylene rubber means an ethylene-propylene copolymer or an ethylene-propylene terpolymer. Ethylene-propylene copolymers (EPM) result from the polymerization of ethylene and propylene and contain a saturated chain of the polymethylene type. Ethylene-propylene terpolymers (EPDM) are produced in a similar manner as EPM, except that a moderate amount of the third monomer is added to the reaction sequence. Typical third monomers include ethylidene norbornene, 1,4-hexadiene, or dicyclopentadiene. Ethylidene norbornene is the most commonly used. The production process includes, but is not limited to, polymerization, recycle, recovery, and packaging operations. The polymerization reaction may occur in either a solution process or a suspension process.

Extruding unit means a unit operation which converts polymer into a different shape by melting or mixing the polymer and then forcing it through an orifice to create a continuously extruded product.

Front-end refers to the unit operations in an EPPU prior to, and including, the stripping operations. The process front-end includes all activity from raw material storage through the stripping operation, including pre-polymerization blending, reactions, etc. For all gas-phased reaction processes, all unit operations are considered to be front-end.

Gas-phased reaction process means an elastomer production process where the reaction occurs in a gas phase, fluidized bed.

Grade means the subdivision of an elastomer product type by different characteristics such as molecular weight, monomer composition, significant mooney values, and the presence or absence of extender oil and/or carbon black.

Group 1 batch front-end process vent means a batch front-end process vent

releasing annual organic HAP emissions greater than or equal to 11,800 kg/yr and with a cutoff flow rate, calculated in accordance with §63.488(f), greater than or equal to the annual average flow rate.

Group 2 batch front-end process vent means a batch front-end process vent that does not fall within the definition of a Group 1 batch front-end process vent.

Group 1 continuous front-end process vent means a continuous front-end process vent releasing a gaseous emission stream that has a total resource effectiveness index value, calculated according to §63.115 of subpart G, less than or equal to 1.0.

Group 2 continuous front-end process vent means a continuous front-end process vent that does not fall within the definition of a Group 1 continuous front-end process vent.

Group 1 storage vessel means a storage vessel at an existing affected source that meets the applicability criteria specified in Table 3 of this subpart, or a storage vessel at a new affected source that meets the applicability criteria specified in Table 4 of this subpart.

Group 2 storage vessel means a storage vessel that does not fall within the definition of a Group 1 storage vessel.

Group 1 wastewater stream means a process wastewater stream from an elastomer product process unit at an existing or new source with a total volatile organic hazardous air pollutant average concentration greater than or equal to 10,000 parts per million by weight of compounds listed in table 9 of subpart G at any flowrate; or a process wastewater stream from a process unit at an existing or new source that has an average flow rate greater than or equal to 10 liters per minute and a total volatile organic hazardous air pollutant concentration greater than 1,000 parts per million by weight of compounds listed in table 9 of subpart G.

Group 2 wastewater stream means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

Halobutyl rubber means a butyl rubber elastomer produced using halogenated copolymers.

Halogenated aggregate batch vent stream means an aggregate batch vent stream determined to have a total mass emission rate of halogen atoms contained in organic compounds of 3,750 kg/yr or greater determined by the Procedures presented in §63.488(h).

Halogenated batch front-end process vent means a batch front-end process vent determined to have a mass emission rate of halogen atoms contained in organic compounds of 3,750 kg/yr or greater determined by the procedures presented in §63.488(h).

Halogenated continuous front-end process vent means a continuous front-end process vent determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kg/hr or greater determined by the procedures presented in §63.115(d)(2)(v) of subpart G.

High conversion latex means a latex where all monomers are reacted to at least 95 percent conversion.

Hypalon™ means a chlorosulfonated polyethylene that is a synthetic rubber produced for uses such as wire and cable insulation, shoe soles and heels, automotive components, and building products.

Latex means a colloidal aqueous emulsion of elastomer. A latex may be further processed into finished products by direct use as a coating or as a foam, or it may be precipitated to separate the rubber particles, which are then used in dry state to prepare finished products.

Latex weight includes the weight of the polymer and the weight of the water solution.

Mass process means a process carried out through the use of thermal energy (e.g., polymerization reaction). Mass processes do not utilize emulsifying or suspending agents, but can utilize catalysts or other additives.

Material recovery section means the equipment that recovers unreacted or by-product materials from any process section for return to the EPPU, off-site purification or treatment, or sale. Equipment designed to separate unreacted or by-product material from the polymer product is to be included in this process section, provided that at the time of initial compliance some of the material is recovered for reuse in

the process, off-site purification or treatment, or sale. Otherwise, such equipment is to be assigned to one of the other process sections, as appropriate. If equipment is used to recover unreacted or by-product material and return it directly to the same piece of process equipment from which it was emitted, then the recovery equipment is considered to be part of the process section that contains the process equipment. On the other hand, if equipment is used to recover unreacted or by-product material and return it to a different piece of process equipment in the same process section, the recovery equipment is considered to be part of a material recovery section. Equipment that treats recovered materials is to be included in this process section, but equipment that also treats raw materials is not to be included in this process section. The latter equipment is to be included in the raw materials preparation section.

Month means either a calendar month or a repeating 30-day period. For the purposes of compliance with the back-end limitations in § 63.506, a month can begin on any day of the month (i.e., starting on the 15th and ending on the 14th of the following month), as long as the month never contains more than 31 calendar days.

Neoprene means a polymer of chloroprene (2-chloro-1,3-butadiene). The free radical emulsion process is generally used to produce neoprene, although other methods may be used.

Nitrile butadiene latex means a polymer consisting primarily of unsaturated nitriles and dienes, usually acrylonitrile and 1,3-butadiene, that is sold as a latex.

Nitrile butadiene rubber means a polymer consisting primarily of unsaturated nitriles and dienes, usually acrylonitrile and 1,3-butadiene, not including those facilities that produce nitrile butadiene latex.

Organic hazardous air pollutant(s) (or organic HAP) means one or more of the chemicals listed in Table 5 of this subpart or any other chemical which:

(1) Is knowingly introduced into the manufacturing process other than as an impurity, or has been or will be reported under any Federal or State pro-

gram, such as EPCRA section 311, 312, or 313 or Title V; and

(2) Is listed in Table 2 of subpart F of this part.

Polybutadiene rubber/styrene butadiene rubber by solution means a polymer of 1,3-butadiene produced using a solution process, and/or a polymer that consists primarily of styrene and butadiene monomer units and is produced using a solution process.

Polymerization reaction section means the equipment designed to cause monomer(s) to react to form polymers, including equipment designed primarily to cause the formation of short polymer chains (e.g., oligomers or low polymers), but not including equipment designed to prepare raw materials for polymerization (e.g., esterification vessels). For the purposes of this subpart, the polymerization reaction section begins with the equipment used to transfer the materials from the raw materials preparation section and ends with the last vessel in which polymerization occurs.

Polysulfide rubber means a polymer produced by reacting sodium polysulfide and chloroethyl formal. Polysulfide rubber may be produced as latexes or solid product.

Primary product is defined in and determined by the procedures specified in § 63.480(f).

Process section means the equipment designed to accomplish a general but well-defined task in polymers production. Process sections include raw materials preparation, polymerization reaction, and material recovery. A process section may be dedicated to a single EPPU or may be common to more than one EPPU.

Process unit means a collection of equipment assembled and connected by pipes or ducts to process raw materials and to manufacture a product.

Process vent means a point of emission from a unit operation having a gaseous emission stream. Typical process vents include condenser vents, dryer vents, vacuum pumps, steam ejectors, and atmospheric vents from reactors and other process vessels, but do not include pressure relief valves.

Product means a compound or material which is manufactured by a process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Raw materials preparation section means the equipment at a polymer manufacturing plant designed to prepare raw materials, such as monomers and solvents, for polymerization. For the purposes of this standard, this process section begins with the equipment used to transfer raw materials from storage and/or the equipment used to transfer recovered material from the material recovery process sections, and ends with the last piece of equipment that prepares the material for polymerization. The raw materials preparation section may include equipment that is used to purify, dry, or otherwise treat raw materials or raw and recovered materials together; to activate catalysts; and to promote esterification including the formation of some short polymer chains (oligomers). The raw materials preparation section does not include equipment that is designed primarily to accomplish the formation of oligomers, the treatment of recovered materials alone, or the storage of raw materials.

Recovery operations equipment means the equipment used to separate the components of process streams. Recovery operations equipment includes distillation units, condensers, etc. Equipment used for wastewater treatment shall not be considered recovery operations equipment.

Resin means a polymer that is not an elastomer. The following are characteristics of resins and the production of resins:

- (1) The polymer is a block polymer;
- (2) The manufactured polymer does not require vulcanization to make useful products;
- (3) The polymer production process is operated to achieve at least 99 percent monomer conversion; and
- (4) The polymer process unit does not recycle unreacted monomer back to the process.

Solid state polymerization unit means a unit operation which, through the application of heat, furthers the polym-

erization (i.e., increases the intrinsic viscosity) of polymer chips.

Solution process means a process where both the monomers and the resulting polymers are dissolved in an organic solvent.

Steady-state conditions means that all variables (temperatures, pressures, volumes, flow rates, etc.) in a process do not vary significantly with time; minor fluctuations about constant mean values can occur.

Storage vessel means a tank or other vessel that is used to store liquids that contain one or more organic HAP and that has been assigned, according to the procedures in §63.480(g), to an EPPU that is subject to this subpart. Storage vessels do not include:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (3) Vessels with capacities smaller than 38 cubic meters;
- (4) Vessels and equipment storing and/or handling material that contains no organic HAP, or organic HAP as impurities only;
- (5) Surge control vessels and bottoms receiver tanks; and
- (6) Wastewater storage tanks.

Stripping technology means the removal of organic compounds from a raw elastomer product by the use of heat and/or vacuum. Stripping technology includes steam stripping, direct volatilization, chemical stripping, and other methods of devolatilization.

Styrene butadiene latex means a polymer consisting primarily of styrene and butadiene monomer units produced using an emulsion process and sold as a latex.

Styrene butadiene rubber by emulsion means a polymer consisting primarily of styrene and butadiene monomer units produced using an emulsion process. Styrene butadiene rubber by emulsion does not include styrene butadiene latex.

Suspension process means a process carried out with the reactants in a state of suspension, typically achieved through the use of water and/or suspending agents (e.g., polymerization reaction).

Total organic compounds (TOC) means those compounds, excluding methane and ethane, measured according to the procedures of Method 18 or Method 25A of 40 CFR part 60, appendix A.

Year means any consecutive 12-month period or 365 rolling days. For the purposes of emissions averaging, the term year applies to any 12-month period selected by the facility and defined in its Emissions Averaging Plan. For the purposes of batch cycle limitations, the term year applies to the 12-month period defined by the facility in its Notification of Compliance Status.

§ 63.483 Emission standards.

(a) Except as allowed under paragraphs (b) and (c) of this section, the owner or operator of an existing or new affected source shall comply with the provisions in:

- (1) Section 63.484 for storage vessels;
- (2) Section 63.485 for continuous front-end process vents;
- (3) Sections 63.486 through 63.492 for batch front-end process vents;
- (4) Sections 63.493 through 63.500 for back-end process operations;
- (5) Section 63.501 for wastewater;
- (6) Section 63.502 for equipment leaks;
- (7) Section 63.504 for additional test methods and procedures;
- (8) Section 63.505 for monitoring levels and excursions; and
- (9) Section 63.506 for general reporting and recordkeeping requirements.

(b) Instead of complying with §§ 63.484, 63.485, 63.493, and 63.501, the owner or operator of an existing affected source may elect to control any or all of the storage vessels, continuous front-end process vents, batch front-end process vents, aggregate batch vent streams, and back-end process emissions within the affected source, plus any or all process wastewater streams associated with the affected source, to different levels using an emissions averaging compliance approach that uses the procedures specified in § 63.503. An owner or operator electing to use emissions averaging must still comply with the provisions of §§ 63.484, 63.485, 63.486, 63.493, and 63.501 for affected source emission points not included in the emissions average.

(c) A State may decide not to allow the use of the emissions averaging compliance approach specified in paragraph (b) of this section as a compliance option for an existing affected source.

§ 63.484 Storage vessel provisions.

(a) For each storage vessel located at an affected source, except for those storage vessels exempted by paragraph (b) of this section, the owner or operator shall comply with the requirements of §§ 63.119 through 63.123 and § 63.148 of subpart G, with the differences noted in paragraphs (c) through (q) of this section.

(b) Storage vessels described in paragraphs (b)(1) through (b)(7) of this section are exempt from the storage vessel requirements of this section.

- (1) Storage vessels containing styrene-butadiene latex;
- (2) Storage vessels containing other latex products and located downstream of the stripping operations;
- (3) Storage vessels containing high conversion latex products;
- (4) Storage vessels located downstream of the stripping operations at affected sources subject to the back-end residual organic HAP limitation located in § 63.494, that are complying through the use of stripping technology, as specified in § 63.495;
- (5) Storage vessels containing styrene;
- (6) Storage vessels containing acrylamide; and
- (7) Storage vessels containing epichlorohydrin.

(c) When the term “storage vessel” is used in §§ 63.119 through 63.123 and 63.148 of subpart G, the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(d) When the term “Group 1 storage vessel” is used in §§ 63.119 through 63.123 and § 63.148 of subpart G, the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(e) When the term “Group 2 storage vessel” is used in §§ 63.119 through 63.123 and § 63.148 of subpart G, the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(f) When the emissions averaging provisions of § 63.150 of subpart G are referred to in § 63.119 and § 63.123 of subpart G, the emissions averaging provisions contained in § 63.503 shall apply for the purposes of this subpart.

(g) When December 31, 1992 is referred to in § 63.119 of subpart G, it shall be replaced with June 12, 1995 for the purposes of this subpart.

(h) When April 22, 1994 is referred to in § 63.119 of subpart G, it shall be replaced with September 5, 1996 for the purposes of this subpart.

(i) Each owner or operator shall comply with this paragraph instead of § 63.120(d)(1)(ii) of subpart G for the purposes of this subpart. If the control device used to comply with this section is also used to comply with §§ 63.485 through § 63.501, the performance test required for these sections is acceptable for demonstrating compliance with § 63.119(e) of subpart G for the purposes of this subpart. The owner or operator will not be required to prepare a design evaluation for the control device as described in § 63.120(d)(1)(i) of subpart G, if the performance test meets the criteria specified in paragraphs (i)(1) and (i)(2) of this section.

(1) The performance test demonstrates that the control device achieves greater than or equal to the required control efficiency specified in § 63.119(e)(1) or § 63.119(e)(2) of subpart G, as applicable; and

(2) The performance test is submitted as part of the Notification of Compliance Status required by § 63.506(e)(5).

(j) When the term “operating range” is used in § 63.120(d)(3)(i) of subpart G, it shall be replaced with the term “level,” for the purposes of this subpart. This level shall be established using the procedures specified in § 63.505.

(k) When the Notification of Compliance Status requirements contained in § 63.152(b) of subpart G are referred to in §§ 63.120, 63.122, and 63.123 of subpart G, the Notification of Compliance Status requirements contained in § 63.506(e)(5) shall apply for the purposes of this subpart.

(l) When the Periodic Report requirements contained in § 63.152(c) of subpart G are referred to in §§ 63.120, 63.122, and 63.123 of subpart G, the Periodic Report

requirements contained in § 63.506(e)(6) shall apply for the purposes of this subpart.

(m) When other reports as required in § 63.152(d) of subpart G are referred to in § 63.122 of subpart G, the reporting requirements contained in § 63.506(e)(7) shall apply for the purposes of this subpart.

(n) When the Implementation Plan requirements contained in § 63.151(c) of subpart G are referred to in § 63.119 through § 63.123 of subpart G, for the purposes of this subpart the owner or operator of an affected source need not comply.

(o) When the Initial Notification Plan requirements contained in § 63.151(b) of subpart G are referred to in § 63.119 through § 63.123 of subpart G, for the purposes of this subpart the owner or operator of an affected source need not comply.

(p) When the determination of equivalence criteria in § 63.102(b) of subpart F are referred to in § 63.121(a) of subpart G, the provisions in § 63.6(g) of subpart A shall apply for the purposes of this subpart.

(q) The compliance date for storage vessels at affected sources subject to the provisions of this section is specified in § 63.481.

§ 63.485 Continuous front-end process vent provisions.

(a) For each continuous front-end process vent located at an affected source, the owner or operator shall comply with the requirements of §§ 63.113 through 63.118 of subpart G, except as provided for in paragraphs (b) through (s) of this section. Continuous front-end process vents that are combined with one or more batch front-end process vents shall comply with paragraph (m) or (n) of this section.

(b) When the term “process vent” is used in §§ 63.113 through 63.118 of subpart G, it shall be replaced with the term “continuous front-end process vent,” and the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(c) When the term “halogenated process vent” is used in §§ 63.113 through 63.118 of subpart G, it shall be replaced with the term “halogenated continuous

front-end process vent,” and the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(d) When the term “Group 1 process vent” is used in §§ 63.113 through 63.118 of subpart G, it shall be replaced with the term “Group 1 continuous front-end process vent,” and the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(e) When the term “Group 2 process vent” is used in §§ 63.113 through 63.118 of subpart G, it shall be replaced with the term “Group 2 continuous front-end process vent,” and the definition of this term in § 63.482 shall apply for the purposes of this subpart.

(f) When December 31, 1992 is referred to in § 63.113 of subpart G, it shall be replaced with June 12, 1995 for the purposes of this subpart.

(g) When §§ 63.151(f), alternative monitoring parameters, and 63.152(e), submission of an operating permit, of subpart G are referred to in §§ 63.114(c) and 63.117(e) of subpart G, § 63.506(f), alternative monitoring parameters, and § 63.506(e)(8), submission of an operating permit, respectively, shall apply for the purposes of this subpart.

(h) When the Notification of Compliance Status requirements contained in § 63.152(b) of subpart G are referred to in §§ 63.114, 63.117, and 63.118 of subpart G, the Notification of Compliance Status requirements contained in § 63.506(e)(5) shall apply for the purposes of this subpart.

(i) When the Periodic Report requirements contained in § 63.152(c) of subpart G are referred to in §§ 63.117 and 63.118 of subpart G, the Periodic Report requirements contained in § 63.506(e)(6) shall apply for the purposes of this subpart.

(j) When the definition of excursion in § 63.152(c)(2)(ii)(A) of subpart G is referred to in § 63.118(f)(2) of subpart G, the definition of excursion in § 63.505(g) and (h) shall apply for the purposes of this subpart.

(k) For the purposes of this subpart, owners and operators shall comply with § 63.505, parameter monitoring levels and excursions, instead of § 63.114(e) of subpart G. When the term “range” is used in § 63.117(f), § 63.118(a)(2)(iv), (b)(2)(iv), (f)(1), and (f)(6) of subpart G, it shall be replaced with the term

“level.” This level is determined in accordance with § 63.505.

(l) When reports of process changes are required under § 63.118 (g), (h), (i), and (j) of subpart G, paragraphs (l)(1) through (l)(4) of this section shall apply for the purposes of this subpart.

(1) Whenever a process change, as defined in § 63.115(e) of subpart G, is made that causes a Group 2 continuous front-end process vent to become a Group 1 continuous front-end process vent, the owner or operator shall submit the following information in the first periodic report following the process change, as specified in § 63.506(e)(6)(iii)(D)(2):

(i) A description of the process change; and

(ii) A schedule for compliance with § 63.113(a) of subpart G, as required under § 63.506(e)(6)(iii)(D)(2).

(2) Whenever a process change, as defined in § 63.115(e) of subpart G, is made that causes a Group 2 continuous front-end process vent with a TRE greater than 4.0 to become a Group 2 continuous front-end process vent with a TRE less than 4.0, the owner or operator shall submit the following information in the first periodic report following the process change, as specified in § 63.506(e)(6)(iii)(D)(2):

(i) A description of the process change; and

(ii) A schedule for compliance with the provisions of § 63.113(d) of subpart G, as required under § 63.506(e)(6)(iii)(D)(2).

(3) Whenever a process change, as defined in § 63.115(e) of subpart G, is made that causes a Group 2 continuous front-end process vent with a flow rate less than 0.005 standard cubic meter per minute (scmm) to become a Group 2 continuous front-end process vent with a flow rate of 0.005 scmm or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit the following information in the first periodic report following the process change, as specified in § 63.506(e)(6)(iii)(D)(2):

(i) A description of the process change; and

(ii) A schedule for compliance with two provisions of § 63.113(d) of subpart G, as required under § 63.506(e)(6)(iii)(D)(2).

(4) Whenever a process change, as defined in § 63.115(e) of subpart G, is made that causes a Group 2 continuous front-end process vent with an organic HAP concentration less than 50 parts per million by volume (ppmv) to become a Group 2 continuous front-end process vent with an organic HAP concentration of 50 ppmv or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit the following information in the first periodic report following the process change, as specified in § 63.506(e)(6)(iii)(D)(2):

(i) A description of the process change; and

(ii) A schedule for compliance with the provisions of § 63.113(d) of subpart G, as required under § 63.506(e)(6)(iii)(D)(2).

(m) If a batch front-end process vent is combined with a continuous front-end process vent prior to being routed to a control device, the combined vent stream shall comply with either paragraph (m)(1) or (m)(2) of this section, as appropriate.

(1) If the continuous front-end process vent is a Group 1 continuous front-end process vent, the combined vent stream shall comply with all requirements for a Group 1 continuous process vent stream in §§ 63.113 through 63.118 of subpart G, with the differences noted in paragraphs (b) through (l) of this section.

(2) If the continuous front-end process vent is a Group 2 continuous front-end process vent, the TRE index value shall be calculated during maximum representative operating conditions. For combined streams containing continuous front-end and batch front-end process vents, the maximum representative operating conditions shall be during periods when batch emission episodes are venting to the control device resulting in the highest concentration of organic HAP in the combined vent stream.

(n) If a batch front-end process vent is combined with a continuous front-end process vent prior to being routed to a recovery device, the TRE index value shall be calculated at the exit of the recovery device at maximum representative operating conditions. For combined vent streams containing con-

tinuous front-end and batch front-end process vents, the maximum representative operating conditions shall be during periods when batch emission episodes are venting to the recovery device resulting in the highest concentration of organic HAP in the combined vent stream.

(o) Group 1 halogenated continuous front-end process vents at affected existing sources producing butyl rubber, halobutyl rubber, or ethylene propylene rubber are exempt from the requirements to control hydrogen halides and halogens from the outlet of combustion devices contained in § 63.113(c) of subpart G and are exempt from the prohibition against flaring halogenated vent streams, which is contained in § 63.113(a)(1)(ii) of subpart G, if the conditions in paragraphs (o)(1) and (o)(2) of this section are met. Affected new sources are not exempt from these provisions.

(1)(i) For affected sources producing butyl rubber, halobutyl rubber, or ethylene propylene rubber using a solution process, if the halogenated continuous front-end process vent stream was controlled by a combustion device prior to June 12, 1995, or

(ii) For affected sources producing ethylene propylene rubber using a gas-phased reaction process, if the halogenated continuous front-end process vent stream was controlled by a combustion device since startup.

(2) The combustion device meets the requirements of § 63.113(a)(1)(i), § 63.113(a)(2), § 63.113(a)(3), or § 63.113(b) of subpart G.

(p) The compliance date for continuous front-end process vents subject to the provisions of this section is specified in § 63.481. This replaces the reference to § 63.100 of subpart F in § 63.115(e)(2) of subpart G.

(q) *Internal combustion engines.* In addition to the three options for the control of a Group 1 continuous front-end process vent listed in § 63.113(a)(1)–(3) of subpart G, an owner or operator can route emissions of organic HAP to an internal combustion engine, provided the conditions listed in paragraphs (q)(1) through (q)(3) of this section are met.

(1) The vent stream routed to the internal combustion engine shall not be a

halogenated continuous front-end process vent stream.

(2) The organic HAP is introduced with the primary fuel.

(3) The owner or operator continuously monitors the on/off status of the internal combustion engine.

(4) If an internal combustion engine meeting the requirements of paragraphs (q) (1) through (3) of this section is used to comply with the provisions of § 63.113(a) of subpart G, the internal combustion engine is exempt from the source testing requirements of § 63.116 of subpart G.

(r) When the provisions of § 63.116 (c)(3) and (c)(4) of subpart G specify that Method 18 shall be used, Method 18 or Method 25A may be used for the purposes of this subpart. The use of Method 25A shall comply with paragraphs (r)(1) and (r)(2) of this section.

(1) The organic HAP used as the calibration gas for Method 25A shall be the single organic HAP representing the largest percent by volume of the emissions.

(2) The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(s) When the provisions of § 63.116(b) identify conditions under which a performance test is not required, for purposes of this subpart, the exemption in paragraph (s)(1) of this section shall also apply. Further, if a performance test meeting the conditions specified in paragraph (s)(2) of this section has been conducted by the owner or operator, the results of that performance test shall suffice, for the purposes of this section.

(1) An incinerator burning hazardous waste for which the owner or operator complies with the requirements of 40 CFR part 264, subpart O.

(2) Performance tests done for other subparts in part 60 or part 63 where total organic HAP or TOC was measured, provided that the owner or operator can demonstrate that operating conditions for the process and control or recovery device during the perform-

ance test are representative of current operating conditions.

[62 FR 46925, Sept. 5, 1996, as amended at 62 FR 37722, July 15, 1997]

§ 63.486 Batch front-end process vent provisions.

(a) *Batch front-end process vents.* Except as specified in paragraph (b) of this section, owners and operators of new and existing affected sources with batch front-end process vents shall comply with the requirements in §§ 63.487 through 63.492. The batch front-end process vent group status shall be determined in accordance with § 63.488. Batch front-end process vents classified as Group 1 shall comply with the reference control technology requirements for Group 1 batch front-end process vents in § 63.487, the monitoring requirements in § 63.489, the performance test methods and procedures to determine compliance requirements in § 63.490, the recordkeeping requirements in § 63.491, and the reporting requirements in § 63.492. All Group 2 batch front-end process vents shall comply with the applicable reference control technology requirements in § 63.487, the recordkeeping requirements in § 63.491, and the reporting requirements in § 63.492.

(b) *Aggregate batch vent streams.* Aggregate batch vent streams, as defined in § 63.482, are subject to the control requirements for individual batch front-end process vents, as specified in § 63.487(b), as well as the monitoring, testing, recordkeeping, and reporting requirements specified in § 63.489 through § 63.492.

§ 63.487 Batch front-end process vents—reference control technology.

(a) *Batch front-end process vents.* The owner or operator of a Group 1 batch front-end process vent, as determined using the procedures in § 63.488, shall comply with the requirements of either paragraph (a)(1) or (a)(2) of this section. Compliance can be based on either organic HAP or TOC.

(1) For each batch front-end process vent, reduce organic HAP emissions using a flare.

(i) The flare shall comply with the requirements of § 63.11(b) of subpart A.

(ii) Halogenated batch front-end process vents, as defined in § 63.482, shall not be vented to a flare.

(2) For each batch front-end process vent, reduce organic HAP emissions for the batch cycle by 90 weight percent using a control device. Owners or operators may achieve compliance with this paragraph through the control of selected batch emission episodes or the control of portions of selected batch emission episodes. Documentation demonstrating how the 90 weight percent emission reduction is achieved is required by § 63.490(c)(2).

(b) *Aggregate batch vent streams.* The owner or operator of an aggregate batch vent stream that contains one or more Group 1 batch front-end process vents shall comply with the requirements of either paragraph (b)(1) or (b)(2) of this section. Compliance can be based on either organic HAP or TOC.

(1) For each aggregate batch vent stream, reduce organic HAP emissions using a flare.

(i) The flare shall comply with the requirements of § 63.11(b) of subpart A.

(ii) Halogenated aggregate batch vent streams, as defined in § 63.482, shall not be vented to a flare.

(2) For each aggregate batch vent stream, reduce organic HAP emissions by 90 weight percent on a continuous basis using a control device.

(c) *Halogenated emissions.* Halogenated Group 1 batch front-end process vents, halogenated aggregate batch vent streams, and halogenated continuous front-end process vents that are combusted as part of complying with paragraph (a)(2) or (b)(2) of this section, shall be controlled according to either paragraph (c)(1) or (c)(2) of this section.

(1) If a combustion device is used to comply with paragraph (a)(2) or (b)(2) of this section for a halogenated batch front-end process vent or halogenated aggregate batch vent stream, the emissions shall be ducted from the combustion device to an additional control device that reduces overall emissions of hydrogen halides and halogens by 99 percent before those emissions are discharged to the atmosphere.

(2) A control device may be used to reduce the halogen atom mass emission

rate to less than 3,750 kg/yr for batch front-end process vents or aggregate batch vent streams and thus make the batch front-end process vent or aggregate batch vent stream nonhalogenated. The nonhalogenated batch front-end process vent or aggregate batch vent stream must then comply with the requirements of either paragraph (a) or (b) of this section, as appropriate.

(d) If a boiler or process heater is used to comply with the percent reduction requirement specified in paragraph (a)(2) or (b)(2) of this section, the batch front-end process vent or aggregate batch vent stream shall be introduced into the flame zone of such a device.

(e) *Combination of batch front-end process vents or aggregate batch vent streams with continuous front-end process vents.* A batch front-end process vent or aggregate batch vent stream combined with a continuous front-end process vent stream is not subject to the provisions of §§ 63.488 through 63.492, providing the requirements of paragraphs (e)(1), (e)(2), and either (e)(3) or (e)(4) of this section are met.

(1) The batch front-end process vent is combined with a continuous front-end process vent prior to routing the continuous front-end process vent to a control or recovery device. In this paragraph, the definitions of control device and recovery device as they relate to continuous front-end process vents shall be used.

(2) The only emissions to the atmosphere from the batch front-end process vent or aggregate batch vent stream prior to being combined with the continuous front-end process vent are from equipment subject to and in compliance with § 63.502.

(3) If the batch front-end vent stream or aggregate batch vent stream is combined with a continuous front-end process vent stream prior to being routed to a control device, the combined vent stream shall comply with the requirements in § 63.485(m). In this paragraph, the definition of control device as it relates to continuous front-end process vents shall be used.

(4) If the batch front-end process vent or aggregate batch vent stream is combined with a continuous front-end process vent stream prior to being routed to a recovery device, the combined vent stream shall comply with the requirements in § 63.485(n). In this paragraph, the definition of recovery device as it relates to continuous front-end process vents shall be used.

(f) *Group 2 batch front-end process vents with annual emissions greater than or equal to the level specified in § 63.488(d).* The owner or operator of a Group 2 batch front-end process vent with annual emissions greater than or equal to the level specified in § 63.488(d) shall comply with the provisions of paragraphs (f)(1) and (f)(2) of this section.

(1) Establish a batch cycle limitation that ensures that the Group 2 batch front-end process vent does not become a Group 1 batch front-end process vent, and

(2) Comply with the recordkeeping requirements in § 63.491(d)(2), and the reporting requirements in § 63.492(a)(3) and (b).

(g) *Group 2 batch front-end process vents with annual emissions less than the level specified in § 63.488(d).* The owner or operator of a Group 2 batch front-end process vent with annual organic HAP emissions less than the level specified in § 63.488(d), shall comply with either paragraphs (g)(1) and (g)(2) of this section or with paragraphs (f)(1) and (f)(2) of this section.

(1) Establish a batch cycle limitation that ensures emissions do not exceed the appropriate level specified in § 63.488(d), and

(2) Comply with the recordkeeping requirements in § 63.491(d)(1), and the reporting requirements in § 63.492(a)(2), (b), and (c).

§ 63.488 Methods and procedures for batch front-end process vent group determination.

(a) *General requirements.* Except as provided in paragraph (a)(3) of this section, the owner or operator of batch front-end process vents at affected sources shall determine the group status of each batch front-end process vent in accordance with the provisions of this section. This determination

may be based on either organic HAP or TOC emissions.

(1) The procedures specified in paragraphs (b) through (i) shall be followed for the expected mix of products for a given batch front-end process vent, as specified in paragraph (a)(1)(i) of this section, or for the worst-case HAP emitting batch unit operation, as specified in paragraphs (a)(1)(ii) through (a)(1)(iv) of this section. "Worst-case HAP emitting product" is defined in paragraph (a)(1)(iii) of this section.

(i) If an owner or operator chooses to follow the procedures specified in paragraphs (b) through (i) of this section for the expected mix of products, an identification of the different products and the number of batch cycles accomplished for each is required as part of the group determination documentation.

(ii) If an owner or operator chooses to follow the procedures specified in paragraphs (b) through (i) of this section for the worst-case HAP emitting product, documentation identifying the worst-case HAP emitting product is required as part of the group determination documentation.

(iii) Except as specified in paragraph (a)(1)(iii)(B) of this section, the worst-case HAP emitting product is as defined in paragraph (a)(1)(iii)(A) of this section.

(A) The worst-case HAP emitting product is the one with the highest mass emission rate (kg organic HAP per hour) averaged over the entire time period of the batch cycle.

(B) Alternatively, when one product is produced more than 75 percent of the time, accounts for more than 75 percent of the annual mass of product, and the owner or operator can show that the mass emission rate (kg organic HAP per hour) averaged over the entire time period of the batch cycle can reasonably be expected to be similar to the mass emission rate for other products having emissions from the same batch front-end process vent, that product may be considered the worst-case HAP emitting product.

(C) An owner or operator shall determine the worst-case HAP emitting product for a batch front-end process vent as specified in paragraphs

(a)(1)(iii)(C)(1) through (a)(1)(iii)(C)(3) of this section.

(1) The emissions per batch emission episode shall be determined using any of the procedures specified in paragraph (b) of this section. The mass emission rate (kg organic HAP per hour) averaged over the entire time period of the batch cycle shall be determined by summing the emissions for each batch emission episode making up a complete batch cycle and dividing by the total duration in hours of the batch cycle.

(2) To determine the worst-case HAP emitting product as specified under paragraph (a)(1)(iii)(A) of this section, the mass emission rate for each product shall be determined and compared.

(3) To determine the worst-case HAP emitting product as specified under paragraph (a)(1)(iii)(B) of this section, the mass emission rate for the product meeting the time and mass criteria of paragraph (a)(1)(iii)(B) of this section shall be determined, and the owner or operator shall provide adequate information to demonstrate that the mass emission rate for said product is similar to the mass emission rates for the other products having emissions from the same batch process vent. In addition, the owner or operator shall provide information demonstrating that the selected product meets the time and mass criteria of paragraph (a)(1)(iii)(B) of this section.

(iv) The annual production of the worst-case HAP emitting product shall be determined by ratioing the production time of the worst-case product up to a 12 month period of actual production. It is not necessary to ratio up to a maximum production rate (i.e., 8,760 hours per year at maximum design production).

(2) The annual uncontrolled organic HAP or TOC emissions and average flow rate shall be determined at the exit from the batch unit operation. For the purposes of these determinations, the primary condenser operating as a reflux condenser on a distillation column, the primary condenser recovering monomer or solvent from a batch stripping operation, and the primary condenser recovering monomer or solvent from a batch distillation operation

shall be considered part of the batch unit operation. All other devices that recover or oxidize organic HAP or TOC vapors shall be considered control devices as defined in § 63.482.

(3) The owner or operator of a batch front-end process vent complying with the flare provisions in § 63.487(a)(1) or § 63.487(b)(1) or routing the batch front-end process vent to a control device to comply with the requirements in § 63.487(a)(2) or § 63.487(b)(2) is not required to perform the batch front-end process vent group determination described in this section, but shall comply with all requirements applicable to Group 1 batch front-end process vents.

(b) *Determination of annual emissions.* The owner or operator shall calculate annual uncontrolled TOC or organic HAP emissions for each batch front-end process vent using the methods described in paragraphs (b)(1) through (b)(8) of this section. Paragraphs (b)(1) through (b)(4) of this section present procedures that can be used to calculate the emissions from individual batch emission episodes. Emissions from batch front-end processes involving multicomponent systems are to be calculated using the procedures in paragraphs (b)(1) through (b)(4) of this section. Individual HAP partial pressures in multicomponent systems shall be determined by the following methods: If the components are miscible in one another, use Raoult's law to calculate the partial pressures; if the solution is a dilute aqueous mixture, use Henry's law constants to calculate partial pressures; if Raoult's law or Henry's law are not appropriate or available, use experimentally obtained activity coefficients, Henry's law constants, or solubility data; if Raoult's law or Henry's law are not appropriate, use models, such as the group-contribution models, to predict activity coefficients; and if Raoult's law or Henry's law are not appropriate, assume the components of the system behave independently and use the summation of all vapor pressures from the HAP's as the total HAP partial pressure. Chemical property data can be obtained from standard reference texts. Paragraph

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(b)(5) of this section describes how direct measurement can be used to estimate emissions. If the owner or operator can demonstrate that the procedures in paragraphs (b)(1) through (b)(4) of this section are not appropriate to estimate emissions from a batch front-end process emission episode, emissions may be estimated using engineering assessment, as described in paragraph (b)(6) of this section. Owners or operators are not required to demonstrate that direct measurement is not appropriate before utilizing engineering assessment. Paragraph (b)(6)(ii) of this section describes how

an owner or operator shall demonstrate that the procedures in paragraphs (b)(1) through (b)(4) of this section are not appropriate. Emissions from a batch cycle shall be calculated in accordance with paragraph (b)(7) of this section, and annual emissions from the batch front-end process vent shall be calculated in accordance with paragraph (b)(8) of this section.

(1) TOC or organic HAP emissions from the purging of an empty vessel shall be calculated using Equation 1. This equation does not take into account evaporation of any residual liquid in the vessel.

$$E_{\text{episode}} = \frac{(V_{\text{ves}})(P)(MW_{\text{WAVG}})}{RT} (1 - 0.37^m) \quad [\text{Eq. 1}]$$

where:

E_{episode} =Emissions, kg/episode.

V_{ves} =Volume of vessel, m³.

P =TOC or total organic HAP partial pressure, kPa.

MW_{WAVG} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section, kg/kmol.

R =Ideal gas constant, 8.314 m³÷ kPa/kmol÷°K.

T =Temperature of vessel vapor space, °K.

m =Number of volumes of purge gas used.

(2) TOC or organic HAP emissions from the purging of a filled vessel shall be calculated using Equation 2.

$$E_{\text{episode}} = \frac{(y)(V_{\text{dr}})(P)^2(MW_{\text{WAVG}})}{RT \left(P - \sum_{i=1}^n P_i x_i \right)} (T_m) \quad [\text{Eq. 2}]$$

where:

E_{episode} =Emissions, kg/episode.

y =Saturated mole fraction of all TOC or organic HAP in vapor phase.

V_{dr} =Volumetric gas displacement rate, m³/min.

P =Pressure in vessel vapor space, kPa.

MW_{WAVG} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section, kg/kmol.

R =Ideal gas constant, 8.314 m³÷ kPa/kmol÷°K.

T =Temperature of vessel vapor space, °K.

P_i =Vapor pressure of TOC or individual organic HAP i , kPa.

x_i =Mole fraction of TOC or organic HAP i in the liquid.

n =Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated.

T_m =Minutes/episode.

(3) Emissions from vapor displacement due to transfer of material into or out of a vessel shall be calculated using Equation 3.

$$E_{\text{episode}} = \frac{(y)(V)(P)(MW_{\text{WAVG}})}{RT} \quad [\text{Eq. 3}]$$

where:

E_{episode} =Emissions, kg/episode.

y =Saturated mole fraction of all TOC or organic HAP in vapor phase.

V =Volume of gas displaced from the vessel, m^3 .

P =Pressure of vessel vapor space, kPa.

MW_{WAVG} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section, kg/kmol.

R =Ideal gas constant, $8.314 \text{ m}^3 \cdot \text{kPa} / \text{kmol} \cdot ^\circ\text{K}$.

T =Temperature of vessel vapor space, $^\circ\text{K}$.

(4) Emissions caused by the heating of a vessel shall be calculated using the procedures in either paragraph (b)(4)(i), (b)(4)(ii), or (b)(4)(iii) of this section, as appropriate.

(i) If the final temperature to which the vessel contents is heated is lower than 50 K below the boiling point of the HAP in the vessel, then emissions shall be calculated using the equations in paragraphs (b)(4)(i)(A) through (b)(4)(i)(D) of this section.

(A) Emissions caused by heating of a vessel shall be calculated using Equation 4. The assumptions made for this calculation are atmospheric pressure of 760 mm Hg and the displaced gas is always saturated with VOC vapor in equilibrium with the liquid mixture.

$$E_{\text{episode}} = \left[\frac{\frac{\sum_{i=1}^n (P_i) T_1}{101.325 - \sum_{i=1}^n (P_i) T_1} + \frac{\sum_{i=1}^n (P_i) T_2}{101.325 - \sum_{i=1}^n (P_i) T_2}}{2} \right] \quad [\text{Eq. 4}]$$

$$* (\Delta \eta) \left[\frac{(MW_{\text{WAVG}, T_1}) + (MW_{\text{WAVG}, T_2})}{2} \right]$$

where:

E_{episode} =Emissions, kg/episode.

$(P_i) T_1$, $(P_i) T_2$ =Partial pressure (kPa) TOC or each organic HAP in the vessel headspace at initial (T_1) and final (T_2) temperature.

n =Number of organic HAP in stream.

Note: Summation not required if TOC emissions are being estimated.

$\Delta \eta$ =Number of kilogram-moles (kg-moles) of gas displaced, determined in accordance with paragraph (b)(4)(i)(B) of this section.

101.325=Constant, kPa.

(MW_{WAVG, T_1}) , (MW_{WAVG, T_2}) =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section.

(B) The moles of gas displaced, $\Delta \eta$, is calculated using equation 5.

$$\Delta \eta = \frac{V_{\text{fs}}}{R} \left[\left(\frac{P_{a1}}{T_1} \right) - \left(\frac{P_{a2}}{T_2} \right) \right] \quad [\text{Eq. 5}]$$

where:

$\Delta \eta$ =Number of kg-moles of gas displaced.

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V_{fs} =Volume of free space in the vessel, m^3 .

R =Ideal gas constant, $8.314 \text{ m}^3 \cdot \text{kPa} / \text{kmol} \cdot \text{K}$.

P_{a1} =Initial noncondensable gas pressure in the vessel, kPa.

P_{a2} =Final noncondensable gas pressure, kPa.

T_1 =Initial temperature of vessel, K.

T_2 =Final temperature of vessel, K.

(C) The initial and final pressure of the noncondensable gas in the vessel shall be calculated using equation 6.

$$P_a = 101.325 - \sum_{i=1}^n (P_i)T \quad [\text{Eq. 6}]$$

where:

P_a =Initial or final partial pressure of noncondensable gas in the vessel headspace, kPa.

101.325=Constant, kPa.

$(P_i)T$ =Partial pressure of TOC or each organic HAP i in the vessel headspace, kPa, at the initial or final temperature (T_1 or T_2).

n =Number of organic HAP in stream.

Note: Summation not required if TOC emissions are being estimated.

(D) The weighted average molecular weight of organic HAP in the displaced gas, MW_{HAP} , shall be calculated using equation 7:

$$MW_{WAVG} = \frac{\sum_{i=1}^n (\text{mass of } C)_i (\text{molecular weight of } C)_i}{\sum_{i=1}^n (\text{mass of } C)_i} \quad [\text{Eq. 7}]$$

where:

c =TOC or organic HAP component

n =Number of TOC or organic HAP components in stream.

(ii) If the vessel contents are heated to a temperature greater than 50 K below the boiling point, then emissions from the heating of a vessel shall be calculated as the sum of the emissions calculated in accordance with paragraphs (b)(4)(ii)(A) and (b)(4)(ii)(B) of this section.

(A) For the interval from the initial temperature to the temperature 50 K below the boiling point, emissions shall be calculated using Equation 4, where T_2 is the temperature 50 K below the boiling point.

(B) For the interval from the temperature 50 K below the boiling point to the final temperature, emissions shall be calculated as the summation of emissions for each 5 K increment, where the emissions for each increment shall be calculated using Equation 4.

(I) If the final temperature of the heatup is lower than 5 K below the boiling point, the final temperature for the last increment shall be the final

temperature for the heatup, even if the last increment is less than 5 K.

(2) If the final temperature of the heatup is higher than 5 K below the boiling point, the final temperature for the last increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.

(3) If the vessel contents are heated to the boiling point and the vessel is not operating with a condenser, the final temperature for the final increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.

(iii) If the vessel is operating with a condenser, and the vessel contents are heated to the boiling point, the primary condenser is considered part of the process, as described in § 63.488(a)(2). Emissions shall be calculated as the sum of Equation 4, which calculates emissions due to heating the vessel contents to the temperature of the gas exiting the condenser, and Equation 3, which calculates emissions due to the displacement of the remaining saturated noncondensable gas in the vessel. The final temperature in

Equation 4 shall be set equal to the exit gas temperature of the condenser. Equation 3 shall be used as written below in Equation 3a, using free space volume, and T_2 is set equal to the condenser exit gas temperature.

$$E_{\text{episode}} = \frac{(y_i)(V_{fs})(P_T)(MW_{\text{HAP}})}{(R)(T)} \quad [\text{Eq. 3a}]$$

where:

E_{episode} =Organic HAP emissions, kg/episode.

y_i =Saturated mole fraction of organic HAP in the vapor phase.

V_{fs} =Volume of the free space in the vessel, m^3 .

P_T =Pressure of the vessel vapor space, kPa.

MW_{HAP} =Weighted average molecular weight of organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section.

R =Ideal gas constant, $8.314 \text{ m}^3 \div \text{kPa} / \text{kmol} \div \text{K}$.

T =Temperature of condenser exit stream K.

n =Number of organic HAP in stream.

(5) The owner or operator may estimate annual emissions for a batch emission episode by direct measurement. If direct measurement is used, the owner or operator shall either perform a test for the duration of a representative batch emission episode or perform a test during only those periods of the batch emission episode for which the emission rate for the entire episode can be determined or for which the emissions are greater than the average emission rate of the batch emission episode. The owner or operator choosing either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used provided the results are still relevant to the current batch process vent conditions. Performance tests shall follow the procedures specified in paragraphs (b)(5)(i) through (b)(5)(iii) of this section. The procedures in either paragraph (b)(5)(iv) or

(b)(5)(v) of this section shall be used to calculate the emissions per batch emission episode.

(i) Method 1 or 1A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. No traverse is necessary when Method 2A or 2D is used to determine gas stream volumetric flow rate.

(ii) Gas stream volumetric flow rate and/or average flow rate shall be determined as specified in paragraph (e) of this section.

(iii) Method 18 or Method 25A, of 40 CFR part 60, appendix A, shall be used to determine the concentration of TOC or organic HAP, as appropriate. The use of Method 25A shall comply with paragraphs (b)(5)(iii)(A) and (b)(5)(iii)(B) of this section.

(A) The organic HAP used as the calibration gas for Method 25A shall be the single organic HAP representing the largest percent by volume of the emissions.

(B) The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(iv) If an integrated sample is taken over the entire batch emission episode to determine TOC or average total organic HAP concentration, emissions shall be calculated using Equation 8.

$$E_{\text{episode}} = K \left[\sum_{j=1}^n (C_j)(M_j) \right] \text{AFR}(T_h) \quad [\text{Eq. 8}]$$

where:

E_{episode} =Emissions, kg/episode

K =Constant, $2.494 \times 10^{-6} (\text{ppmv})^{-1} (\text{gm-mole/scm}) (\text{kg/gm}) (\text{min/hr})$, where standard temperature is 20°C .

C_j =Average concentration of TOC or sample organic HAP component j of the gas stream for the batch emission episode, dry basis, ppmv.

M_j =Molecular weight of TOC or sample component j of the gas stream, dry basis, gm/gm-mole.

AFR =Average flow rate of gas stream, dry basis, scmm.

T_h =Hours/episode

n =Number of organic HAP in stream.

Note: Summation not required if

TOC emissions are being estimated using a TOC concentration measured using Method 25A.

(v) If grab samples are taken to determine TOC or average total organic HAP concentration, emissions shall be calculated according to paragraphs (b)(5)(v)(A) and (b)(5)(v)(B) of this section.

(A) For each measurement point, the emission rate shall be calculated using Equation 9.

$$E_{\text{point}} = K \left[\sum_{j=1}^n C_j M_j \right] FR \quad [\text{Eq. 9}]$$

where:

E_{point} =Emission rate for individual measurement point, kg/hr.

K =Constant, 2.494×10^{-6} (ppmv) $^{-1}$ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20°C.

C_j =Concentration of TOC or sample component j of the gas stream, dry basis, ppmv.

M_j =Molecular weight of TOC or sample component j of the gas stream, gm/gm-mole.

FR =Flow rate of gas stream for the measurement point, dry basis, scmm.

n =Number of organic HAP in stream.

Note: Summation not required if TOC emissions are being estimated using a TOC concentration measured using Method 25A.

(B) The emissions per batch emission episode shall be calculated using Equation 10.

$$E_{\text{episode}} = (\text{DUR}) \left[\sum_{i=1}^n \frac{E_i}{n} \right] \quad [\text{Eq. 10}]$$

where:

E_{episode} =Emissions, kg/episode.

DUR =Duration of the batch emission episode, hr/episode.

E_i =Emissions for measurement point i , kg/hr.

n =Number of measurements.

(6) If the owner or operator can demonstrate that the methods in paragraphs (b)(1) through (b)(4) of this section are not appropriate to estimate emissions for a batch emissions episode, the owner or operator may use engineering assessment to estimate

emissions as specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section. All data, assumptions, and procedures used in an engineering assessment shall be documented.

(i) Engineering assessment includes, but is not limited to, the following:

(A) Previous test results, provided the tests are representative of current operating practices.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Flow rate, TOC emission rate, or organic HAP emission rate specified or implied within a permit limit applicable to the batch front-end process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances,

(2) Estimation of flow rate based on physical equipment design, such as pump or blower capacities, and

(3) Estimation of TOC or organic HAP concentrations based on saturation conditions.

(ii) The emissions estimation equations in paragraphs (b)(1) through (b)(4) of this section shall be considered inappropriate for estimating emissions for a given batch emissions episode if one or more of the criteria in paragraphs (b)(6)(ii)(A) through (b)(6)(ii)(B) of this section are met.

(A) Previous test data are available that show a greater than 20 percent discrepancy between the test value and the estimated value.

(B) The owner or operator can demonstrate to the Administrator through any other means that the emissions estimation equations are not appropriate for a given batch emissions episode.

(C) Data or other information supporting a finding that the emissions estimation equations are inappropriate as specified under paragraph (b)(6)(ii)(A) of this section shall be reported in the Notification of Compliance Status, as required in § 63.506(e)(5).

(D) Data or other information supporting a finding that the emissions estimation equations are inappropriate as specified under paragraph

(b)(6)(ii)(B) of this section shall be reported in the Precompliance Report, as required in § 63.506(e)(3).

(7) For each batch front-end process vent, the TOC or organic HAP emissions associated with a single batch cycle shall be calculated using Equation 11.

$$E_{\text{cycle}} = \sum_{i=1}^n E_{\text{episode}_i} \quad [\text{Eq. 11}]$$

where:

E_{cycle} =Emissions from an individual batch cycle, kg/batch cycle.

E_{episode_i} =Emissions from a batch emission episode i , kg/episode.

n =Number of batch emission episodes for the batch cycle.

(8) Annual TOC or organic HAP emissions from a batch front-end process vent shall be calculated using Equation 12.

$$AE = \sum_{i=1}^n (N_i)(E_{\text{cycle}_i}) \quad [\text{Eq. 12}]$$

where:

AE =Annual emissions from a batch front-end process vent, kg/yr.

N_i =Number of type i batch cycles performed annually, cycles/year.

E_{cycle_i} =Emissions from the batch front-end process vent associated with single type i batch cycle, as determined in paragraph (b)(7) of this section, kg/batch cycle.

n =Number of different types of batch cycles that cause the emission of TOC or organic HAP from the batch front-end process vent.

(c) [Reserved]

(d) *Minimum emission level exemption.*

A batch front-end process vent with annual emissions less than 11,800 kg/yr is considered a Group 2 batch front-end process vent and the owner or operator of that batch front-end process vent shall comply with the requirements in § 63.487 (f) or (g). The owner or operator of that batch front-end process vent is not required to comply with the provisions in paragraphs (e) through (g) of this section.

(e) *Determination of average flow rate.* The owner or operator shall determine the average flow rate for each batch emission episode in accordance with one of the procedures provided in paragraphs (e)(1) through (e)(2) of this section.

The annual average flow rate for a batch front-end process vent shall be calculated as specified in paragraph (e)(3) of this section.

(1) Determination of the average flow rate for a batch emission episode by direct measurement shall be made using the procedures specified in paragraphs (e)(1)(i) through (e)(1)(iii) of this section.

(i) The vent stream volumetric flow rate (Q_v) for a batch emission episode, in scmm at 20 °C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(ii) The volumetric flow rate of a representative batch emission episode shall be measured every 15 minutes.

(iii) The average flow rate for a batch emission episode shall be calculated using Equation 13.

$$AFR_{\text{episode}} = \frac{\sum_{i=1}^n FR_i}{n} \quad [\text{Eq. 13}]$$

where:

AFR_{episode} =Average flow rate for the batch emission episode, scmm.

FR_i =Flow rate for individual measurement i , scmm.

n =Number of flow rate measurements taken during the batch emission episode.

(2) The average flow rate for a batch emission episode may be determined by engineering assessment, as defined in paragraph (b)(6)(i) of this section. All data, assumptions, and procedures used shall be documented.

(3) The annual average flow rate for a batch front-end process vent shall be calculated using Equation 14.

$$AFR = \frac{\sum_{i=1}^n (DUR_i)(AFR_{\text{episode},i})}{\sum_{i=1}^n (DUR_i)} \quad [\text{Eq. 14}]$$

where:

AFR =Annual average flow rate for the batch front-end process vent, scmm.

DUR_i =Duration of type i batch emission episodes annually, hr/yr.

$AFR_{episode,i}$ =Average flow rate for type i batch emission episode, scmm.

n =Number of types of batch emission episodes venting from the batch front-end process vent.

(f) *Determination of cutoff flow rate.* For each batch front-end process vent, the owner or operator shall calculate the cutoff flow rate using Equation 15.

$$CFR = (0.00437)(AE) - 51.6 \quad [\text{Eq. 15}]$$

where:

CFR =Cutoff flow rate, scmm.

AE =Annual TOC or organic HAP emissions, as determined in paragraph (b)(8) of this section, kg/yr.

(g) *Group 1/Group 2 status determination.* The owner or operator shall compare the cutoff flow rate, calculated in accordance with paragraph (f) of this section, with the annual average flow rate, determined in accordance with paragraph (e)(3) of this section. The group determination status for each batch front-end process vent shall be made using the criteria specified in paragraphs (g)(1) and (g)(2) of this section.

(1) If the cutoff flow rate is greater than or equal to the annual average flow rate of the stream, the batch front-end process vent is classified as a Group 1 batch front-end process vent.

(2) If the cutoff flow rate is less than the annual average flow rate of the stream, the batch front-end process vent is classified as a Group 2 batch front-end process vent.

(h) *Determination of halogenation status.* To determine whether a batch front-end process vent or an aggregate batch vent stream is halogenated, the annual mass emission rate of halogen atoms contained in organic compounds shall be calculated using the procedures specified in paragraphs (h)(1) through (h)(3) of this section.

(1) The concentration of each organic compound containing halogen atoms (ppmv, by compound) for each batch emission episode shall be determined based on the following procedures:

(i) Process knowledge that no halogens or hydrogen halides are present in the process may be used to demonstrate that a batch emission episode is nonhalogenated. Halogens or hydrogen halides that are unintentionally introduced into the process shall not be considered in making a finding that a batch emission episode is nonhalogenated.

(ii) Engineering assessment as discussed in paragraph (b)(6)(i) of this section.

(iii) Concentration of organic compounds containing halogens and hydrogen halides as measured by Method 26 or 26A of 40 CFR part 60, appendix A.

(iv) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(2) The annual mass emissions of halogen atoms for a batch front-end process vent shall be calculated using Equation 16.

$$E_{\text{halogen}} = K \left[\sum_{j=1}^n \sum_{i=1}^m (C_{\text{avg},j}) (L_{j,i}) (M_{j,i}) \right] AFR \quad [\text{Eq. 16}]$$

where:

E_{halogen} =Mass of halogen atoms, dry basis, kg/yr.

K =Constant, $0.022 \text{ (ppmv)}^{-1} \text{ (kg-mole per scm) (min/yr)}$, where standard temperature is 20°C.

AFR =Annual average flow rate of the batch front-end process vent, determined according to paragraph (e) of this section, scmm.

$M_{j,i}$ =Molecular weight of halogen atom i in compound j, kg/kg-mole.

$L_{j,i}$ =Number of atoms of halogen i in compound j.

n =Number of halogenated compounds j in the batch front-end process vent.

m =Number of different halogens i in each compound j of the batch front-end process vent.

$C_{\text{avg},j}$ =Average annual concentration of halogenated compound j in the

batch front-end process vent, as determined by using Equation 17, dry basis, ppmv.

$$C_{\text{avg},j} = \frac{\sum_{i=1}^n (\text{DUR}_i)(C_i)}{\sum_{i=1}^n (\text{DUR}_i)} \quad [\text{Eq. 17}]$$

where:

DUR_i=Duration of type i batch emission episodes annually, hr/yr.

C_i=Average concentration of halogenated compound j in type i batch emission episode, ppmv.

n=Number of types of batch emission episodes venting from the batch front-end process vent.

(3) The annual mass emissions of halogen atoms for an aggregate batch vent stream shall be the sum of the annual mass emissions of halogen atoms for all batch front-end process vents included in the aggregate batch vent stream.

(i) *Process changes affecting Group 2 batch front-end process vents.* Whenever process changes, as described in paragraph (i)(1) of this section, are made that affect one or more Group 2 batch front-end process vents, the owner or operator shall comply with paragraphs (i)(2) and (i)(3) of this section.

(1) Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type; or whenever there is replacement, removal, or modification of recovery equipment considered part of the batch unit operation as specified in paragraph (a)(2) of this section. An increase in the annual number of batch cycles beyond the batch cycle limitation constitutes a process change. For purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the margin of variation on which the original group determination was based.

(2) For each batch front-end process vent affected by a process change, the owner or operator shall redetermine the group status by repeating the procedures specified in paragraphs (b) through (g) of this section, as applica-

ble. Alternatively, engineering assessment, as described in paragraph (b)(6)(i) of this section, can be used to determine the effects of the process change.

(3) Based on the results of paragraph (i)(2) of this section, owners or operators shall comply with either paragraph (i)(3) (i), (ii), or (iii) of this section.

(i) If the redetermination described in paragraph (i)(2) of this section indicates that a Group 2 batch front-end process vent has become a Group 1 batch front-end process vent as a result of the process change, the owner or operator shall submit a report as specified in §63.492(b) and shall comply with the Group 1 provisions in §63.487 through §63.492 in accordance with the compliance schedule described in §63.506(e)(6)(iii)(D)(2).

(ii) If the redetermination described in paragraph (i)(2) of this section indicates that a Group 2 batch front-end process vent with annual emissions less than the applicable level specified in paragraph (d) of this section, and that is in compliance with §63.487(g), now has annual emissions greater than or equal to the applicable level specified by paragraph (d) of this section but remains a Group 2 batch front-end process vent, the owner or operator shall submit a report as specified in §63.492(c) and shall comply with §63.487(f) in accordance with the compliance schedule required by §63.506(e)(6)(iii)(D)(2).

(iii) If the redetermination described in paragraph (i)(2) of this section indicates no change in group status or no change in the relation of annual emissions to the levels specified in paragraph (d) of this section, the owner or operator is not required to submit a report, as described in §63.492(d).

§ 63.489 Batch front-end process vents—monitoring requirements.

(a) *General requirements.* Each owner or operator of a batch front-end process vent or aggregate batch vent stream that uses a control device to comply with the requirements in §63.487(a)(2) or §63.487(b)(2) shall install the monitoring equipment specified in paragraph (b) of this section.

(1) This monitoring equipment shall be in operation at all times when batch emission episodes, or portions thereof, that the owner or operator has selected to control are vented to the control device, or at all times when an aggregate batch vent stream is vented to the control device.

(2) The owner or operator shall operate control devices such that monitored parameters remain above the minimum level or below the maximum level, as appropriate, established as specified in paragraph (e) of this section.

(b) *Batch front-end process vent and aggregate batch vent stream monitoring parameters.* The monitoring equipment specified in paragraphs (b)(1) through (b)(8) of this section shall be installed as specified in paragraph (a) of this section. The parameters to be monitored are specified in Table 6 of this subpart.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, the temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including, but not limited to, a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all batch front-end process vents or aggregate batch vent streams are introduced with the primary fuel or are used as the primary fuel is exempt from this requirement.

(4) Where a scrubber is used with an incinerator, boiler, or process heater in concert with the combustion of halo-

genated batch front-end process vents, the following monitoring equipment is required for the scrubber:

(i) A pH monitoring device equipped with a continuous recorder to monitor the pH of the scrubber effluent; and

(ii) A flow meter equipped with a continuous recorder shall be located at the scrubber influent to monitor the scrubber liquid flow rate.

(5) Where an absorber is used, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device are required, each equipped with a continuous recorder.

(6) Where a condenser is used, a condenser exit temperature (product side) monitoring device equipped with a continuous recorder is required.

(7) Where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle are required.

(8) As an alternate to paragraphs (b)(5) through (b)(7) of this section, the owner or operator may install an organic monitoring device equipped with a continuous recorder.

(c) *Alternative monitoring parameters.* An owner or operator of a batch front-end process vent or aggregate batch vent stream may request approval to monitor parameters other than those required by paragraph (b) of this section. The request shall be submitted according to the procedures specified in § 63.506(f). Approval shall be requested if the owner or operator:

(1) Uses a control device other than those included in paragraph (b) of this section; or

(2) Uses one of the control devices included in paragraph (b) of this section, but seeks to monitor a parameter other than those specified in Table 6 of this subpart and paragraph (b) of this section.

(d) *Monitoring of bypass lines.* The owner or operator of a batch front-end process vent or aggregate batch vent stream using a vent system that contains bypass lines that could divert

emissions away from a control device used to comply with § 63.487(a) or § 63.487(b) shall comply with either paragraph (d)(1), (d)(2), or (d)(3) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.491(e)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert emissions away from the control device and to the atmosphere; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and emissions are not diverted through the bypass line. Records shall be generated as specified in § 63.491(e)(4).

(3) Continuously monitor the bypass line damper or valve position using computer monitoring and record any periods when the position of the bypass line damper or valve has changed as specified in § 63.491(e)(4).

(e) *Establishment of parameter monitoring levels.* Parameter monitoring levels for batch front-end process vents and aggregate batch vent streams shall be established as specified in paragraphs (e)(1) through (e)(3) of this section.

(1) For each parameter monitored under paragraph (b) of this section, the owner or operator shall establish a level, defined as either a maximum or minimum operating parameter as denoted in Table 7 of this subpart, that indicates proper operation of the control device. The level shall be established in accordance with the procedures specified in § 63.505.

(i) For batch front-end process vents using a control device to comply with § 63.487(a)(2), the established level shall reflect the control efficiency established as part of the initial compliance demonstration specified in § 63.490(c)(2).

(ii) For aggregate batch vent streams using a control device to comply with § 63.487(b)(2), the established level shall reflect the control efficiency requirement specified in § 63.487(b)(2).

(2) The established level, along with supporting documentation, shall be submitted in the Notification of Compliance Status or the operating permit application as required in § 63.506(e)(5) or § 63.506(e)(8), respectively.

(3) The operating day shall be defined as part of establishing the parameter monitoring level and shall be submitted with the information in paragraph (e)(2) of this section. The definition of operating day shall specify the times at which an operating day begins and ends. The operating day shall not exceed 24 hours.

§ 63.490 Batch front-end process vents—performance test methods and procedures to determine compliance.

(a) *Use of a flare.* When a flare is used to comply with § 63.487(a)(1) or § 63.487(b)(1), the owner or operator shall comply with the flare provisions in § 63.11(b) of subpart A.

(b) *Exceptions to performance tests.* An owner or operator is not required to conduct a performance test when a control device specified in paragraphs (b)(1) through (b)(4) of this section is used to comply with § 63.487(a)(2).

(1) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) A boiler or process heater where the vent stream is introduced with the primary fuel or is used as the primary fuel.

(3) A control device for which a performance test was conducted for determining compliance with a new source performance standard (NSPS) and the test was conducted using the same procedures specified in this section and no process changes have been made since the test.

(4) A boiler or process heater burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(5) An incinerator burning hazardous waste for which the owner or operator complies with the requirements of 40 CFR part 264, subpart O.

(6) Performance tests done for other subparts in part 60 or part 63 where total organic HAP or TOC was measured, provided that the owner or operator can demonstrate that operating conditions for the process and control device during the performance test are representative of current operating conditions.

(c) *Batch front-end process vent testing and procedures for compliance with § 63.487(a)(2).* Except as provided in paragraph (b) of this section, an owner or operator using a control device to comply with § 63.487(a)(2) shall conduct a performance test using the procedures specified in paragraph (c)(1) of this section in order to determine the control efficiency of the control device. An owner or operator shall determine the percent reduction for the batch cycle using the control efficiency of the control device as specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section and the procedures specified in paragraph (c)(2) of this section. Compliance may be based on either total organic HAP or TOC. For purposes of this paragraph and all paragraphs that are part of paragraph (c) of this section, the term "batch emission episode" shall have the meaning "period of the batch emission episode selected for control," which may be the entire batch emission episode or may only be a portion of the batch emission episode.

(1) Performance tests shall be conducted as specified in paragraphs (c)(1)(i) through (c)(1)(v) of this section.

(i) Except as specified in paragraph (c)(1)(i)(A) of this section, a test shall be performed for the entire period of each batch emission episode in the batch cycle that the owner or operator selects to control as part of achieving the required 90 percent emission reduction for the batch cycle specified in § 63.487(a)(2). Only one test is required for each batch emission episode selected by the owner or operator for control. The owner or operator shall

follow the procedures listed in paragraphs (c)(1)(i)(B) through (c)(1)(i)(D) of this section.

(A) Alternatively, an owner or operator may choose to test only those periods of the batch emission episode during which the emission rate for the entire episode can be determined or during which the emissions are greater than the average emission rate of the batch emission episode. The owner or operator choosing either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used, provided the results are still relevant to the current batch front-end process vent conditions.

(B) Method 1 or 1A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. No traverse is necessary when Method 2A or 2D is used to determine gas stream volumetric flow rate. Inlet sampling sites shall be located as specified in paragraphs (c)(1)(i)(B)(1) and (c)(1)(i)(B)(2) of this section. Outlet sampling sites shall be located at the outlet of the final control device prior to release to the atmosphere.

(1) The control device inlet sampling site shall be located at the exit from the batch unit operation before any control device. Section 63.488(a)(2) describes those recovery devices considered part of the unit operation. Inlet sampling sites would be after these specified recovery devices.

(2) If a batch process vent is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all batch front-end process vents and primary and secondary fuels introduced into the boiler or process heater.

(C) Gas stream volumetric flow rate and/or average flow rate shall be determined as specified in § 63.488(e).

(D) Method 18 or Method 25A of 40 CFR part 60, Appendix A, shall be used to determine the concentration of organic HAP or TOC, as appropriate. The use of Method 25A shall comply with paragraphs (c)(1)(i)(D)(1) and (c)(1)(i)(D)(2) of this section.

(1) The organic HAP used as the calibration gas for Method 25A shall be the single organic HAP representing the largest percent by volume of the emissions.

(2) The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(ii) If an integrated sample is taken over the entire batch emission episode to determine TOC or average total organic HAP concentration, emissions per batch emission episode shall be calculated using Equations 18 and 19.

$$E_{\text{episode,inlet}} = K \left[\sum_{j=1}^n (C_{j,\text{inlet}})(M_j) \right] (AFR_{\text{inlet}})(T_h) \quad [\text{Eq. 18}]$$

$$E_{\text{episode,outlet}} = K \left[\sum_{j=1}^n (C_{j,\text{outlet}})(M_j) \right] (AFR_{\text{outlet}})(T_h) \quad [\text{Eq. 19}]$$

where:

E_{episode} =Inlet or outlet emissions, kg/episode.

K =Constant, 2.494×10^{-6} (ppmv) $^{-1}$ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20°C.

C_j =Average inlet or outlet concentration of TOC or sample component j of the gas stream for the batch emission episode, dry basis, ppmv.

M_j =Molecular weight of TOC or sample component j of the gas stream, gm/gm-mole.

AFR =Average inlet or outlet flow rate of gas stream for the batch emission episode, dry basis, scmm.

T_h =Hours/episode.

n =Number of organic HAP in stream.

Note: Summation not required if

TOC emissions are being estimated using a TOC concentration measured using Method 25A.

(iii) If grab samples are taken to determine TOC or total organic HAP concentration, emissions shall be calculated according to paragraphs (c)(1)(iii)(A) and (c)(1)(iii)(B) of this section.

(A) For each measurement point, the emission rates shall be calculated using Equations 20 and 21.

$$E_{\text{point,inlet}} = K \left[\sum_{j=1}^n C_j M_j \right] FR_{\text{inlet}} \quad [\text{Eq. 20}]$$

$$E_{\text{point,outlet}} = K \left[\sum_{j=1}^n C_j M_j \right] FR_{\text{outlet}} \quad [\text{Eq. 21}]$$

where:

E_{point} =Inlet or outlet emission rate for the measurement point, kg/hr.

K =Constant, 2.494×10^{-6} (ppmv) $^{-1}$ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20°C.

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C_j =Inlet or outlet concentration of TOC or sample organic HAP component j of the gas stream, dry basis, ppmv.

M_j =Molecular weight of TOC or sample organic HAP component j of the gas stream, gm/gm-mole.

FR=Inlet or outlet flow rate of gas stream for the measurement point, dry basis, scmm.

n=Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated using a TOC concentration measured using Method 25A.

(B) The emissions per batch emission episode shall be calculated using Equations 22 and 23.

$$E_{\text{episode,inlet}} = (\text{DUR}) \left[\sum_{i=1}^n \frac{E_{\text{point,inlet},i}}{n} \right] \quad [\text{Eq. 22}]$$

$$E_{\text{episode,outlet}} = (\text{DUR}) \left[\sum_{i=1}^n \frac{E_{\text{point,outlet},i}}{n} \right] \quad [\text{Eq. 23}]$$

where:

E_{episode} =Inlet or outlet emissions, kg/episode.

DUR=Duration of the batch emission episode, hr/episode.

$E_{\text{point},i}$ =Inlet or outlet emissions for measurement point i, kg/hr.

n=Number of measurements.

(iv) The control efficiency for the control device shall be calculated using Equation 24.

$$R = \frac{\sum_{i=1}^n E_{\text{inlet},i} - \sum_{i=1}^n E_{\text{outlet},i}}{\sum_{i=1}^n E_{\text{inlet},i}} \quad (100) \quad [\text{Eq. 24}]$$

Where:

$$\text{Percent Reduction} = \frac{\sum_{i=1}^n E_{\text{unc}} + \sum_{i=1}^n E_{\text{inlet,con}} - \sum_{i=1}^n (1-R)(E_{\text{inlet,con}})}{\sum_{i=1}^n E_{\text{unc}} + \sum_{i=1}^n E_{\text{inlet,con}}} 100 \quad [\text{Eq. 25}]$$

R=Control efficiency of control device, percent.

$E_{\text{inlet},i}$ =Mass rate of TOC or total organic HAP for batch emission episode i at the inlet to the control device as calculated under paragraph (c)(1)(ii) or (c)(1)(iii) of this section, kg/hr.

$E_{\text{outlet},i}$ =Mass rate of TOC or total organic HAP for batch emission episode i at the outlet of the control device, as calculated under paragraph (c)(1)(ii) or (c)(1)(iii) of this section, kg/hr.

n=Number of batch emission episodes in the batch cycle selected to be controlled.

(v) If the batch front-end process vent entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic HAP or TOC across the device shall be determined by comparing the TOC or total organic HAP in all combusted batch front-end process vents and primary and secondary fuels with the TOC or total organic HAP exiting the combustion device, respectively.

(2) The percent reduction for the batch cycle shall be determined using Equation 25 and the control device efficiencies specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section. All information used to calculate the batch cycle percent reduction, including a definition of the batch cycle identifying all batch emission episodes, must be recorded as specified in § 63.491(b)(2). This information shall include identification of those batch emission episodes, or portions thereof, selected for control.

where:

E_{unc} = Mass rate of TOC or total organic HAP for uncontrolled batch emission episode i , kg/hr.

$E_{inlet,con}$ = Mass rate of TOC or total organic HAP for controlled batch emission episode i at the inlet to the control device, kg/hr.

R = Control efficiency of control device as specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section.

n = Number of uncontrolled batch emission episodes, controlled batch emission episodes, and control devices. The value of n is not necessarily the same for these three items.

(i) If a performance test is required by paragraph (c) of this section, the control efficiency of the control device shall be as determined in paragraph (c)(1)(iv) of this section.

(ii) If a performance test is not required by paragraph (c) of this section for a combustion control device, as specified in paragraph (b) of this section, the control efficiency of the control device shall be 98 percent. The control efficiency for a flare shall be 98 percent.

(iii) If a performance test is not required by paragraph (c) of this section for a noncombustion control device, the control efficiency shall be determined by the owner or operator based on engineering assessment.

(d) *Batch process vent and aggregate batch vent stream testing for compliance with § 63.487(c) [halogenated emission streams].* An owner or operator controlling halogenated emissions in compliance with § 63.487(c) shall conduct a performance test to determine compliance with the control efficiency specified in § 63.487(c)(1) or the emission limit specified in § 63.487(c)(2) for hydrogen halides and halogens.

(1) Sampling sites shall be located at the inlet and outlet of the scrubber or other control device used to reduce halogen emissions in complying with § 63.487(c)(1) or at the outlet of the control device used to reduce halogen emissions in complying with § 63.487(c)(2).

(2) The mass emissions of each hydrogen halide and halogen compound for the batch cycle or aggregate batch vent stream shall be calculated from

the measured concentrations and the gas stream flow rate(s) determined by the procedures specified in paragraphs (d)(2)(i) and (d)(2)(ii) of this section, except as specified in paragraph (d)(5) of this section.

(i) Method 26 or Method 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration, in Mg per dry scm, of total hydrogen halides and halogens present in the emissions stream.

(ii) Gas stream volumetric flow rate and/or average flow rate shall be determined as specified in § 63.488(e).

(3) To determine compliance with the percent reduction specified in § 63.487(c)(1), the mass emissions for any hydrogen halides and halogens present at the inlet of the scrubber or other control device shall be summed together. The mass emissions of any hydrogen halides or halogens present at the outlet of the scrubber or other control device shall be summed together. Percent reduction shall be determined by subtracting the outlet mass emissions from the inlet mass emissions and then dividing the result by the inlet mass emissions.

(4) To determine compliance with the emission limit specified in § 63.487(c)(2), the annual mass emissions for any hydrogen halides and halogens present at the outlet of the control device and prior to any combustion device shall be summed together and compared to the emission limit specified in § 63.487(c)(2).

(5) The owner or operator may use any other method to demonstrate compliance if the method or data has been validated according to the applicable procedures of Method 301 of appendix A.

(e) *Aggregate batch vent stream testing for compliance with § 63.487(b)(2).* Owners or operators of aggregate batch vent streams complying with § 63.487(b)(2) shall conduct a performance test using the performance testing procedures for continuous front-end process vents in § 63.116(c) of subpart G. For the purposes of this subpart, when the provisions of § 63.116(c) specify that Method 18 shall be used, Method 18 or Method 25A may be used. The use of Method 25A shall comply with paragraphs (e)(1) and (e)(2) of this section.

(1) The organic HAP used as the calibration gas for Method 25A shall be the single organic HAP representing the largest percent by volume of the emissions.

(2) The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(f) *Batch cycle limitation.* The batch cycle limitation required by § 63.487(f)(1) and § 63.487(g)(1) shall be established as specified in paragraph (f)(1) of this section and shall include the elements specified in paragraph (f)(2) of this section.

(1) The batch cycle limitation shall be determined by the owner or operator such that annual emissions for the batch front-end process vent remain less than the level specified in § 63.488(d) when complying with § 63.487(g). Alternatively, when complying with § 63.487(f), the batch cycle limitation shall ensure that annual emissions remain at a level such that the batch front-end process vent remains a Group 2 batch front-end process vent, given the actual annual flow rate for that batch front-end process vent determined according to § 63.488(e)(3). The batch cycle limitation shall be determined using the same basis, as described in § 63.488(a)(1), used to make the group determination (i.e., expected mix of products or worst-case HAP emitting product). The establishment of the batch cycle limitation is not dependent upon any past production or activity level.

(i) If the expected mix of products serves as the basis for the batch cycle limitation, the batch cycle limitation shall be determined such that any foreseeable combination of products which the owner or operator desires the flexibility to manufacture shall be allowed. Combinations of products not accounted for in the documentation required by paragraph (f)(2)(iv) of this section shall not be allowed within the restrictions of the batch cycle limitation.

(ii) If, for a batch front-end process vent with more than one product, a single worst-case HAP emitting prod-

uct serves as the basis for the batch cycle limitation, the batch cycle limitation shall be determined such that the maximum number of batch cycles the owner or operator desires the flexibility to accomplish, using the worst-case HAP emitting product and ensuring that the batch front-end process vent remains a Group 2 batch front-end process vent or that emissions remain less than the level specified in § 63.488(d), shall be allowed. This value shall be the total number of batch cycles allowed within the restrictions of the batch cycle limitation regardless of which products are manufactured.

(2) Documentation supporting the establishment of the batch cycle limitation shall include the information specified in paragraphs (f)(2)(i) through (f)(2)(v) of this section, as appropriate.

(i) Identification that the purpose of the batch cycle limitation is to comply with § 63.487(f)(1) or (g)(1).

(ii) Identification that the batch cycle limitation is based on a single worst-case HAP emitting product or on the expected mix of products for the batch front-end process vent as allowed under § 63.488(a)(1).

(iii) Definition of the operating year, for the purposes of determining compliance with the batch cycle limitation.

(iv) If the batch cycle limitation is based on a single worst-case HAP emitting product, documentation specified in § 63.488(a)(1)(ii) describing how the single product meets the requirements for worst-case HAP emitting product, as specified in § 63.488(a)(1) and the number of batch cycles allowed under the batch cycle limitation for each product associated with the batch front-end process vent are required.

(v) If the batch cycle limitation is based on the expected mix of products, the owner or operator shall provide documentation that describes as many scenarios for differing mixes of products (i.e., how many of each type of product) that the owner or operator desires the flexibility to accomplish. Alternatively, the owner or operator shall provide a description of the relationship among the mix of products that will allow a determination of compliance with the batch cycle limitation under an infinite number of scenarios. For example, if a batch process vent

has two products, each product has the same flow rate and emits for the same amount of time, and product No. 1 has twice the emissions as product No. 2, the relationship describing an infinite number of scenarios would be that the owner or operator can accomplish two batch cycles of product No. 2 for each batch cycle of product No. 1 within the restriction of the batch cycle limitation.

§ 63.491 Batch front-end process vents—recordkeeping requirements.

(a) *Group determination records for batch front-end process vents.* Except as provided in paragraphs (a)(7) through (a)(9) of this section, each owner or operator of an affected source shall maintain the records specified in paragraphs (a)(1) through (a)(6) of this section for each batch front-end process vent subject to the group determination procedures of § 63.488. Except for paragraph (a)(1) of this section, the records required to be maintained by this paragraph are limited to the information developed and used to make the group determination under § 63.488(b) through § 63.488(g), as appropriate. The information required by paragraph (a)(1) of this section is required for all batch front-end process vents subject to the group determination procedures of § 63.488. If an owner or operator did not need to develop certain information (e.g., annual average flow rate) to determine the group status, this paragraph does not require that additional information be developed.

(1) An identification of each unique product that has emissions from one or more batch emission episodes venting from the batch front-end process vent.

(2) A description of, and an emission estimate for, each batch emission episode, and the total emissions associated with one batch cycle for each unique product identified in paragraph (a)(1) of this section that was considered in making the group determination under § 63.488.

(3) Total annual uncontrolled TOC or organic HAP emissions, determined at the exit from the batch unit operation before any emission control, as determined in accordance with § 63.488(b).

(i) For Group 2 batch front-end process vents, emissions shall be determined at the batch cycle limitation.

(ii) For Group 1 batch front-end process vents, emissions shall be those used to determine the group status of the batch front-end process vent.

(4) The annual average flow rate for the batch front-end process vent as determined in accordance with § 63.488(e).

(5) The cutoff flow rate, determined in accordance with § 63.488(f).

(6) The results of the batch front-end process vent group determination, conducted in accordance with § 63.488(g).

(7) If a batch front-end process vent is in compliance with § 63.487(a) or § 63.487(b), and the control device is operating at all times when batch emission episodes are venting from the batch front-end process vent, none of the records in paragraphs (a)(1) through (a)(6) of this section are required.

(8) If a batch front-end process vent is in compliance with § 63.487(a) or § 63.487(b), but the control device is operated only during selected batch emission episodes, only the records in paragraphs (a)(1) through (a)(3) of this section are required.

(9) If the total annual emissions from the batch front-end process vent are less than the appropriate level specified in § 63.488(d), only the records in paragraphs (a)(1) through (a)(3) of this section are required.

(b) *Compliance demonstration records.* Each owner or operator of a batch front-end process vent or aggregate batch vent stream complying with § 63.487(a) or (b), shall keep the following records, as applicable, up-to-date and readily accessible:

(1) The annual mass emissions of halogen atoms in the batch front-end process vent or aggregate batch vent stream determined according to the procedures specified in § 63.488(h)(2).

(2) If a batch front-end process vent is in compliance with § 63.487(a)(2), records documenting the batch cycle percent reduction as specified in § 62.486–4(c)(2).

(3) When using a flare to comply with § 63.487(a)(1):

(i) The flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.11(b) of subpart A; and

(iii) All periods during the compliance determination required by § 63.11(b) of subpart A when the pilot flame is absent.

(4) The following information when using a control device to achieve compliance with § 63.487(a)(2) or (b)(2):

(i) For an incinerator or non-combustion control device, the percent reduction of organic HAP or TOC achieved, as determined using the procedures specified in § 63.490(c) for batch front-end process vents and § 63.490(e) for aggregate batch vent streams;

(ii) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater;

(iii) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the process vent stream is introduced with combustion air or is used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC achieved, as determined using the procedures specified in § 63.490(c) for batch front-end process vents and § 63.490(e) for aggregate batch vent streams; and

(iv) For a scrubber or other control device following a combustion device to control a halogenated batch front-end process vent or halogenated aggregate batch vent stream, the percent reduction of total hydrogen halides and halogens, as determined under § 63.490(d)(3) or the emission limit determined under § 63.490(d)(4).

(c) *Establishment of parameter monitoring level records.* For each parameter monitored according to § 63.489(b) and Table 6 of this subpart, or for alternate parameters and/or parameters for alternate control devices monitored according to § 63.492(e) as allowed under § 63.489(c), maintain documentation showing the establishment of the level that indicates proper operation of the control device as required by § 63.489(e) for parameters specified in § 63.489(b) and as required by § 63.506(f) for alternate parameters. This documentation

shall include the parameter monitoring data used to establish the level.

(d) *Group 2 batch front-end process vent continuous compliance records.* The owner or operator of a Group 2 batch front-end process vent shall comply with either paragraph (d)(1) or (d)(2) of this section, as appropriate.

(1) The owner or operator of a Group 2 batch front-end process vent complying with § 63.487(g) shall keep the following records up-to-date and readily accessible:

(i) Records designating the established batch cycle limitation required by § 63.487(g)(1) and specified in § 63.490(f).

(ii) Records specifying the number and type of batch cycles accomplished.

(2) The owner or operator of a Group 2 batch front-end process vent complying with § 63.487(f) shall keep the following records up-to-date and readily accessible:

(i) Records designating the established batch cycle limitation required by § 63.487(f)(1) and specified in § 63.490(f).

(ii) Records specifying the number and type of batch cycles accomplished for each three month period.

(e) *Controlled batch front-end process vent continuous compliance records.* Each owner or operator of a batch front-end process vent that uses a control device to comply with § 63.487(a) shall keep the following records up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under § 63.489(b) as applicable, and listed in Table 6 of this subpart, or specified by the Administrator in accordance with § 63.492(e) as allowed under § 63.489(c). These records shall be kept as specified under § 63.506(d), except as specified in paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) For flares, the records specified in Table 6 of this subpart shall be kept rather than averages.

(ii) For carbon adsorbers, the records specified in Table 6 of this subpart shall be kept rather than averages.

(2) Records of the batch cycle daily average value of each continuously monitored parameter, except as provided in paragraphs (e)(2)(iii) of this

section, as calculated using the procedures specified in paragraphs (e)(2)(i) through (e)(2)(ii) of this section.

(i) The batch cycle daily average shall be calculated as the average of all parameter values measured during those batch emission episodes, or portions thereof, in the batch cycle that the owner or operator has selected to control.

(ii) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the batch cycle daily averages.

(iii) If all recorded values for a monitored parameter during an operating day are above the minimum or below the maximum level established in accordance with § 63.489(e), the owner or operator may record that all values were above the minimum or below the maximum level established, rather than calculating and recording a batch cycle daily average for that operating day.

(3) Hourly records of whether the flow indicator for bypass lines specified under § 63.489(d)(1) was operating and whether flow was detected at any time during the hour. Also, records of the times and durations of all periods when the vent is diverted from the control device, or the flow indicator specified in § 63.489(d)(1) is not operating.

(4) Where a seal or closure mechanism is used to comply with § 63.489(d)(2) or where computer monitoring of the position of the bypass damper or valve is used to comply with § 63.489(d)(3), hourly records of flow are not required.

(i) For compliance with § 63.489(d)(2), the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanism has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has been broken.

(ii) For compliance with § 63.489(d)(3), the owner or operator shall record the times of all periods when the bypass line valve position has changed.

(5) Records specifying the times and duration of periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high level adjustments. In addition, records specifying any other periods of process or control device operation when monitors are not operating.

(f) *Aggregate batch vent stream continuous compliance records.* In addition to the records specified in paragraphs (b) and (c) of this section, each owner or operator of an aggregate batch vent stream using a control device to comply with § 63.487(b) shall keep records in accordance with the requirements for continuous process vents in § 63.118(a) and § 63.118(b) of subpart G, as applicable and appropriate, except that when complying with § 63.118(b), owners or operators shall disregard statements concerning TRE index values for the purposes of this subpart.

§ 63.492 Batch front-end process vents—reporting requirements.

(a) The owner or operator of a batch front-end process vent at an affected source shall submit the information specified in paragraphs (a)(1) through (a)(4) of this section, as appropriate, as part of the Notification of Compliance Status specified in § 63.506(e)(5).

(1) For each batch front-end process vent complying with § 63.487(a) and each aggregate batch vent stream complying with § 63.487(b), the information specified in § 63.491(b) and § 63.491(c), as applicable.

(2) For each Group 2 batch front-end process vent with annual emissions less than the level specified in § 63.488(d), the information specified in § 63.491(d)(1)(i).

(3) For each Group 2 batch front-end process vent with annual emissions greater than or equal to the level specified in § 63.488(d), the information specified in § 63.491(d)(2)(i).

(4) For each batch process vent subject to the group determination procedures, the information specified in § 63.491(a), as appropriate.

(b) Whenever a process change, as defined in § 63.488(i)(1), is made that causes a Group 2 batch front-end process vent to become a Group 1 batch front-end process vent, the owner or operator shall submit a report within

180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.506(e)(6)(iii)(D)(2). The following information shall be submitted:

(1) A description of the process change; and

(2) A schedule for compliance with the provisions of § 63.487(a) or § 63.487(b), as appropriate, as required under § 63.506(e)(6)(iii)(D)(2).

(c) Whenever a process change, as defined in § 63.488(i)(1), is made that causes a Group 2 batch front-end process vent with annual emissions less than the level specified in § 63.488(d) that is in compliance with § 63.487(g) to have annual emissions greater than or equal to the levels specified in § 63.488(d) but remains a Group 2 batch front-end process vent, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.506(e)(6)(iii)(D)(2). The following information shall be submitted:

(1) A description of the process change;

(2) The results of the redetermination of the annual emissions, average flow rate, and cutoff flow rate required under § 63.488(f) and recorded under § 63.491 (a)(3) through (a)(5); and

(3) The batch cycle limitation determined in accordance with § 63.487(f)(1).

(d) The owner or operator is not required to submit a report of a process change if one of the conditions specified in paragraphs (d)(1) and (d)(2) of this section is met.

(1) The process change does not meet the description of a process change in § 63.488(i).

(2) The redetermined group status remains Group 2 for an individual batch front-end process vent with annual emissions greater than or equal to the level specified in § 63.488(d), or a Group 2 batch front-end process vent with annual emissions less than the level specified in § 63.488(d) complying with § 63.487(g) continues to have emissions

less than the level specified in § 63.488(d).

(e) If an owner or operator uses a control device other than those specified in § 63.489(b) and listed in Table 6 of this subpart or requests approval to monitor a parameter other than those specified in § 63.489(c) and listed in Table 6 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures, as specified in § 63.506(f), as part of the Precompliance Report as required under § 63.506(e)(3). The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Precompliance Report.

(f) Owners or operators complying with § 63.489(d), shall comply with paragraph (f)(1) or (f)(2) of this section, as appropriate.

(1) Reports of the times of all periods recorded under § 63.491(e)(3) when the batch front-end process vent is diverted away from the control device through a bypass line.

(2) Reports of all occurrences recorded under § 63.491(e)(4) in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

§ 63.493 Back-end process provisions.

Owners and operators of new and existing affected sources shall comply with the requirements in § 63.494 through § 63.500. Owners and operators of affected sources that produce only latex products, liquid rubber products, or products in a gas-phased polymerization reaction are not subject to the provisions of these sections. Section 63.494 contains residual organic HAP limitations. Compliance with these residual organic HAP limitations may be achieved by using either stripping technology, or by using control or recovery devices. If compliance with these limitations is achieved using stripping technology, the procedures to determine compliance are specified in § 63.495. If compliance with these limitations is achieved using control or recovery devices, the procedures to determine compliance are specified in § 63.496, and associated monitoring requirements are specified in § 63.497.

Recordkeeping requirements are contained in § 63.498, and reporting requirements in § 63.499. Section 63.500 contains a limitation on carbon disulfide emissions from affected sources that produce styrene butadiene rubber using an emulsion process. Table 8 contains a summary of compliance alternative requirements for these sections.

§ 63.494 Back-end process provisions—residual organic HAP limitations.

(a) The monthly weighted average residual organic HAP content of all grades of elastomer processed, measured immediately after the stripping operation [or the reactor(s) if the plant has no stripper(s)] is completed, shall not exceed the limits provided in paragraphs (a)(1) through (a)(4) of this section, as applicable. Owners or operators shall comply with the requirements of this paragraph using either stripping technology or control/recovery devices.

(1) For styrene butadiene rubber produced by the emulsion process:

(i) A monthly weighted average of 0.40 kg styrene per megagram (Mg) latex for existing sources; and

(ii) A monthly weighted average of 0.23 kg styrene per Mg latex for new sources;

(2) For polybutadiene rubber and styrene butadiene rubber produced by the solution process:

(i) A monthly weighted average of 10 kg total organic HAP per Mg crumb rubber (dry weight) for existing sources; and

(ii) A monthly weighted average of 6 kg total organic HAP per Mg crumb rubber (dry weight) for new sources.

(3) For ethylene-propylene rubber produced by the solution process:

(i) A monthly weighted average of 8 kg total organic HAP per Mg crumb rubber (dry weight) for existing sources; and

(ii) A monthly weighted average of 5 kg total organic HAP per Mg crumb rubber (dry weight) for new sources.

(4) There are no back-end process operation residual organic HAP limitations for neoprene, Hypalon™, nitrile butadiene rubber, butyl rubber, halobutyl rubber, epichlorohydrin elastomer, and polysulfide rubber.

(5) For EPPU that produce both an elastomer product with a residual or-

ganic HAP limitation listed in this section, and a product listed in paragraphs (a)(5) (i) through (iv) of this section, only the residual HAP content of the elastomer product with a residual organic HAP limitation shall be used in determining the monthly average residual organic HAP content.

(i) Resins;

(ii) Liquid rubber products;

(iii) Latexes from which crumb rubber is not coagulated; or

(iii) Elastomer products listed in paragraph (a)(4) of this section.

(b) If an owner or operator complies with the residual organic HAP limitations in paragraph (a) of this section using stripping technology, compliance shall be demonstrated in accordance with § 63.495. The owner or operator shall also comply with the recordkeeping provisions in § 63.498, and the reporting provisions in § 63.499.

(c) If an owner or operator complies with the residual organic HAP limitations in paragraph (a) of this section using control or recovery devices, compliance shall be demonstrated using the procedures in § 63.496. The owner or operator shall also comply with the monitoring provisions in § 63.497, the recordkeeping provisions in § 63.498, and the reporting provisions in § 63.499.

§ 63.495 Back-end process provisions—procedures to determine compliance using stripping technology.

(a) If an owner or operator complies with the residual organic HAP limitations in § 63.494(a) using stripping technology, compliance shall be demonstrated using the periodic sampling procedures in paragraph (b) of this section, or using the stripper parameter monitoring procedures in paragraph (c) of this section. The owner or operator shall determine the monthly weighted average residual organic HAP content for each month in which any portion of the back-end of an elastomer production process is in operation. A single monthly weighted average shall be determined for all back-end process operations at the affected source.

(b) If the owner or operator is demonstrating compliance using periodic sampling, this demonstration shall be in accordance with paragraphs (b)(1) through (b)(5) of this section,

(1) The location of the sampling shall be in accordance with paragraph (d) of this section.

(2) The frequency of the sampling shall be in accordance with paragraphs (b)(2)(i) or (b)(2)(ii) of this section.

(i) If batch stripping is used, at least one representative sample is to be taken from every batch of elastomer produced, at the location specified in paragraph (d) of this section, and identified by elastomer type and by the date and time the batch is completed.

(ii) If continuous stripping is used, at least one representative sample is to be taken each operating day. The sample is to be taken at the location specified in paragraph (d) of this section, and identified by elastomer type and by the date and time the sample was taken.

(3) The residual organic HAP content in each sample is to be determined using specified methods.

(4) The quantity of material (weight of latex or dry crumb rubber) represented by each sample shall be recorded. Acceptable methods of determining this quantity are production records, measurement of stream characteristics, and engineering calculations.

(5) The monthly weighted average shall be determined using the equation in paragraph (f) of this section. All samples taken and analyzed during the month shall be used in the determination of the monthly weighted average.

(c) If the owner or operator is demonstrating compliance using stripper parameter monitoring, this demonstration shall be in accordance with paragraphs (c)(1) through (c)(4) of this section.

(1) The owner or operator shall establish stripper operating parameter levels for each grade in accordance with § 63.505(e).

(2) The owner or operator shall monitor the stripper operating parameters at all times the stripper is in operation. Readings of each parameter shall be made at intervals no greater than 15 minutes.

(3) The residual organic HAP content for each grade shall be determined in accordance with either paragraph (c)(3)(i) or (c)(3)(ii) of this section.

(i) If during the processing of a grade in the stripper, all hourly average pa-

rameter values are in accordance with operating parameter levels established in paragraph (c)(1) of this section, the owner or operator shall use the residual organic HAP content determined in accordance with § 63.505(e)(1).

(ii) If during the processing of a grade in the stripper, the hourly average of any stripper monitoring parameter is not in accordance with an established operating parameter level, the residual organic HAP content shall be determined using the procedures in paragraphs (b)(1) and (b)(3) of this section.

(4) The monthly weighted average shall be determined using the equation in paragraph (f) of this section.

(d) The location of the sampling shall be in accordance with paragraph (d)(1) or (d)(2) of this section.

(1) For styrene butadiene rubber produced by the emulsion process, the sample shall be a sample of the latex taken at the location specified in either paragraph (d)(1)(i), (d)(1)(ii), or (d)(1)(iii) of this section.

(i) When the latex is not blended with other materials or latexes, the sample shall be taken at a location meeting all of the following criteria:

- (A) After the stripping operation,
- (B) Prior to entering the coagulation operations, and
- (C) Before the addition of carbon black or oil extenders.

(ii) When two or more latexes subject to this subpart are blended, samples may be taken in accordance with either paragraph (d)(1)(ii) (A) or (B) of this section, at a location meeting the requirements of paragraphs (d)(1)(i) (A) through (C) of this section.

(A) Individual samples may be taken of each latex prior to blending, or

(B) A sample of the blended latex may be taken.

(iii) When a latex subject to this subpart is blended with a latex or material not subject to this subpart, a sample shall be taken of the latex prior to blending at a location meeting the requirements of paragraphs (d)(1)(i) (A) through (C) of this section.

(2) For styrene butadiene rubber produced by the solution process, polybutadiene rubber produced by the solution process, and ethylene-propylene rubber produced by the solution process, the sample shall be a sample of

crumb rubber taken as soon as safe and feasible after the stripping operation, but no later than the entry point for the first unit operation following the stripper (e.g., the dewatering screen).

(e) [Reserved]

(f) The monthly weighted average residual organic HAP content shall be calculated using Equation 26.

$$\text{HAPCONT}_{\text{avg, wk}} = \frac{\sum_{i=1}^n (C_i)(P_i)}{P_{\text{wk}}} \quad [\text{Eq. 26}]$$

where:

$\text{HAPCONT}_{\text{avg, wk}}$ = Monthly weighted average organic HAP content for all rubber processed at the affected source, kg organic HAP per Mg latex or dry crumb rubber.

n = Number of samples in the month.

C_i = Residual organic HAP content of sample i , determined in accordance with (b)(3) or (c)(3) of this section, kg organic HAP per Mg latex or dry crumb rubber.

P_i = Weight of latex or dry crumb rubber represented by sample i .

P_{wk} = Weight of latex or dry crumb rubber (Mg) processed in the month.

§ 63.496 Back-end process provisions—procedures to determine compliance using control or recovery devices.

(a) If an owner or operator complies with the residual organic HAP limitations in § 63.494(a) using control or recovery devices, compliance shall be demonstrated using the procedures in paragraphs (b) and (c) of this section. Previous test results conducted in accordance with paragraphs (b)(1) through (b)(6) of this section may be used to determine compliance in accordance with paragraph (c) of this section.

(b) Compliance shall be demonstrated using the provisions in paragraphs (b)(1) through (b)(10) of this section, as applicable.

(1) A test shall be conducted, the duration of which shall be in accordance with either paragraph (b)(1)(i) or (b)(1)(ii) of this section, as appropriate.

(i) If the back-end process operations are continuous, the test shall consist of three separate one hour runs.

(ii) If the back-end process operations are batch, the test shall consist of three separate one-hour runs, unless the duration of the batch cycle is less than one-hour, in which case the run length shall equal the complete duration of the back-end process batch cycle.

(2) The test shall be conducted when the grade of elastomer product with the highest residual organic HAP content leaving the stripper is processed in the back-end operations.

(3) The uncontrolled residual organic HAP content in the latex or dry crumb rubber shall be determined in accordance with § 63.495(b)(1) and (b)(3). A separate sample shall be taken and analyzed for each test run. The sample shall be representative of the material being processed in the back-end operation during the test, and does not need to be taken during the test.

(4) The quantity of material (weight of latex or dry crumb rubber) processed during the test run shall be recorded. Acceptable methods of determining this quantity are production records, measurement of stream characteristics, and engineering calculations.

(5) The inlet and outlet emissions from the control or recovery device shall be determined using the procedures in paragraphs (b)(5)(i) through (b)(5)(v) of this section, with the exceptions noted in paragraphs (b)(6) and (b)(7) of this section. The inlet and outlet emissions shall be determined when the material for which the uncontrolled residual organic HAP content is determined in accordance with paragraph (b)(3) of this section, is being processed in the equipment controlled by the control or recovery device.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites. Sampling sites shall be located at the inlet of the control or recovery device as specified in paragraphs (b)(5)(i)(A) or (b)(5)(i)(B) of this section, and at the outlet of the control or recovery device.

(A) The inlet sampling site shall be located at the exit of the back-end process unit operation before any opportunity for emission to the atmosphere, and before any control or recovery device.

(B) If back-end process vent streams are combined prior to being routed to control or recovery devices, the inlet sampling site may be for the combined stream, as long as there is no opportunity for emission to the atmosphere from any of the streams prior to being combined.

(ii) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(iii) To determine the inlet and outlet total organic HAP concentrations, the owner or operator shall use Method 18 or Method 25A of 40 CFR part 60, appendix A. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A may be used. The minimum sampling time for each run shall be in accordance with paragraph (b)(1) of this section, during which either an integrated sample or grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals during the run, with the time between samples no greater than 15 minutes.

(iv) The mass rate of total organic HAP shall be computed using Equations 27 and 28.

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} M_{ij} \right) Q_i \quad [\text{Eq. 27}]$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} M_{oj} \right) Q_o \quad [\text{Eq. 28}]$$

where:

C_{ij} , C_{oj} =Concentration of sample component j of the gas stream at the inlet and outlet of the control or recovery device, respectively, dry basis, ppmv.

E_i , E_o =Mass rate of total organic HAP at the inlet and outlet of the control or recovery device, respectively, dry basis, kg per hour (kg/hr).

M_{ij} , M_{oj} =Molecular weight of sample component j of the gas stream at the inlet and outlet of the control or recovery device, respectively, gm/gm-mole.

Q_i , Q_o =Flow rate of gas stream at the inlet and outlet of the control or recovery device, respectively, dry standard m³/min.

K_2 =Constant, 2.494×10^{-6} (ppmv)⁻¹ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20°C.

(v) Inlet and outlet organic HAP emissions for the run shall be calculated by multiplying the mass rate total inlet and outlet emissions determined in accordance with paragraph (b)(5)(iv) of this section by the duration of the run (in hours).

(6) If a back-end process vent stream is introduced with the combustion air, or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, the inlet and outlet emissions shall be determined in accordance with paragraphs (b)(6)(i) through (b)(6)(iv) of this section.

(i) The inlet organic HAP emissions for the back-end process unit operation shall be determined in accordance with paragraph (b)(5) of this section.

(ii) The owner or operator shall also measure total organic HAP (or TOC, minus methane and ethane) emissions in all process vent streams and primary and secondary fuels introduced into the boiler or process heater, using the procedures in paragraph (b)(5) of this section, with the exceptions noted in paragraphs (b)(6)(ii)(A) through (b)(6)(ii)(C) of this section.

(A) Selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP concentrations in all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(B) Paragraph (b)(5)(iii) of this section is applicable, except that TOC (minus methane and ethane) may be measured instead of total organic HAP.

(C) The mass rates shall be calculated in accordance with paragraph (b)(5)(iv) of this section, except that C_i at the inlet and outlet of the control device shall be the sum of all total organic HAP (or TOC, minus methane and ethane) concentrations for all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(iii) The control efficiency of the boiler or process heater shall be calculated using Equation 29.

$$R = \frac{\sum_{i=1}^n E_{\text{inlet}_i} - \sum_{i=1}^n E_{\text{outlet}_i}}{\sum_{i=1}^n E_{\text{inlet}_i}} (100) \quad (\text{Eq. 29})$$

where:

R=Control efficiency of boiler or process heater, percent.

E_{inlet} =Mass rate of total organic HAP or TOC (minus methane and ethane) for all process vent streams and primary and secondary fuels at the inlet to the boiler or process heater, kg organic HAP/hr or kg TOC/hr.

E_{outlet} =Mass rate of total organic HAP or TOC (minus methane and ethane) for all process vent streams and primary and secondary fuels at the outlet to the boiler or process heater, kg organic HAP/hr or kg TOC/hr.

(iv) The outlet total organic HAP emissions associated with the back-end process unit operation shall be calculated using the equation in paragraph (b)(8) of this section.

(7) An owner or operator is not required to conduct a source test to determine the outlet organic HAP emissions if any control device specified in paragraphs (b)(7)(i) through (b)(7)(v) of this section is used. For these devices, the inlet emissions associated with the back-end process unit operation shall be determined in accordance with paragraph (b)(5) of this section, and the outlet emissions shall be calculated using the equation in paragraph (b)(8) of this section.

(i) A flare, provided the owner or operator complies with the flare provisions in §63.11(b) of subpart A. The compliance determination required by §63.6(h) of subpart A shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions. Compliance determinations are not necessary for flares already deemed

to be in compliance with the flare provisions in §63.11(b) of subpart A.

(ii) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(iii) A boiler or process heater into which the process vent stream is introduced with the primary fuel or is used as the primary fuel.

(iv) A control device for which a performance test was conducted for determining compliance with an NSPS and the test was conducted using the same procedures specified in this section and no process changes have been made since the test.

(v) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(8) If one of the control devices listed in paragraph (b)(6) or (b)(7) of this section is used, the outlet emissions shall be calculated using Equation 30.

$$E_o = E_i (1 - R) \quad [\text{Eq. 30}]$$

where:

E_o =Mass rate of total organic HAP at the outlet of the control or recovery device, respectively, dry basis, kg/hr.

E_i =Mass rate of total organic HAP at the inlet of the control or recovery device, respectively, dry basis, kg/hr, determined using the procedures in paragraph (b)(5)(iv) of this section.

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R=Control efficiency of control device, as specified in paragraph (b)(8) (i), (ii), or (iii) of this section.

(i) If a back-end process vent stream is introduced with the combustion air, or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, the control efficiency of the boiler or process heater shall be determined using the procedures in paragraph (b)(6)(iii) of this section.

(ii) If a back-end process vent is controlled using a control device specified in paragraph (b)(7) (i), (ii), (iii), or (v) of this section, the control device effi-

ciency shall be assumed to be 98 percent.

(iii) If a back-end process vent is controlled using a control device specified in paragraph (b)(7)(iv) of this section, the control device efficiency shall be the efficiency determined in the previous performance test.

(c) Compliance shall be determined using the procedures in this paragraph.

(1) For each test run, the residual organic HAP content, adjusted for the control or recovery device emission reduction, shall be calculated using Equation 31.

Where:

$$\text{HAPCONT}_{\text{run}} = \frac{(C)(P) - (E_{i,\text{run}}) + (E_{o,\text{run}})}{(P)} \quad [\text{Eq. 31}]$$

$\text{HAPCONT}_{\text{run}}$ =Factor, kg organic HAP per kg elastomer (latex or dry crumb rubber).

C=Total uncontrolled organic HAP content, determined in accordance with paragraph (b)(3) of this section, kg organic HAP per kg latex or dry crumb rubber.

P=Weight of latex or dry crumb rubber processed during test run.

$E_{i,\text{run}}$ =Mass rate of total organic HAP at the inlet of the control or recovery device, respectively, dry basis, kg per test run.

$E_{o,\text{run}}$ =Mass rate of total organic HAP at the outlet of the control or recovery device, respectively, dry basis, kg per test run.

(2) A facility is in compliance if the average of the organic HAP contents calculated for all three test runs is below the residual organic HAP limitations in § 63.494(a).

(d) An owner or operator complying with the residual organic HAP limitations in § 63.494(a) using a control or recovery device, shall redetermine the compliance status through the requirements described in paragraph (b) of this section whenever process changes are made. The owner or operator shall report the results of the redetermination in accordance with § 63.499(d). For the purposes of this section, a process

change is any action that would reasonably be expected to impair the performance of the control or recovery device. For the purposes of this section, the production of an elastomer with a residual organic HAP content greater than the residual organic HAP content of the elastomer used in the compliance demonstration constitutes a process change, unless the overall effect of the change is to reduce organic HAP emissions from the source as a whole. Other examples of process changes may include changes in production capacity or production rate, or removal or addition of equipment. For the purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; or changes that reduce the residual organic HAP content of the elastomer.

§ 63.497 Back-end process provisions—monitoring provisions for control and recovery devices.

(a) An owner or operator complying with the residual organic HAP limitations in § 63.494(a) using control or recovery devices, or a combination of stripper technology and control or recovery devices, shall install the monitoring equipment specified in paragraphs (a)(1) through (a)(6) of this section, as appropriate.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, the temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, the temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including, but not limited to, a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all vent streams are introduced with primary fuel or are used as the primary fuel is exempt from this requirement.

(4) For an absorber, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device are required, each equipped with a continuous recorder.

(5) For a condenser, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder is required.

(6) For a carbon adsorber, an integrating regeneration stream flow monitoring device having an accuracy of at least ± 10 percent, capable of recording the total regeneration stream flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle are required.

(b) An owner or operator may request approval to monitor parameters other than those required by paragraph (a) of this section. The request shall be submitted according to the procedures specified in § 63.506(f) or (g). Approval

shall be requested if the owner or operator:

(1) Uses a control or recovery device other than those listed in paragraph (a) of this section; or

(2) Uses one of the control or recovery devices listed in paragraph (a) of this section, but seeks to monitor a parameter other than those specified in paragraph (a) of this section.

(c) The owner or operator shall establish a level, defined as either a maximum or minimum operating parameter, that indicates proper operation of the control or recovery device for each parameter monitored under paragraphs (a)(1) through (a)(6) of this section. This level is determined in accordance with § 63.505. The established level, along with supporting documentation, shall be submitted in the Notification of Compliance Status or the operating permit application, as required in § 63.506 (e)(5) or (e)(8), respectively. The owner or operator shall operate control and recovery devices above or below the established level, as required, to ensure continued compliance with the standard.

(d) The owner or operator of a controlled back-end process vent using a vent system that contains bypass lines that could divert a vent stream away from the control or recovery device used to comply with § 63.494(a) shall comply with paragraph (d)(1), (d)(2), or (d)(3) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.498(d)(5)(iii). The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and the vent

stream is not diverted through the bypass line.

(3) Continuously monitor the bypass line damper or valve position using computer monitoring and record any periods when the position of the bypass line valve has changes as specified in § 63.498(d)(5)(iv).

§ 63.498 Back-end process provisions—recordkeeping.

(a) Each owner or operator shall maintain the records specified in paragraphs (a)(1) through (a)(3) of this section for each back-end process operation at an affected source.

(1) The type of elastomer product processed in the back-end operation.

(2) The type of process (solution process, emulsion process, etc.)

(3) If the back-end process operation is subject to an emission limitation in § 63.494(a), whether compliance will be achieved by stripping technology, or by control or recovery devices.

(b) Each owner or operator of a back-end process operation using stripping technology to comply with an emission limitation in § 63.494(a), and demonstrating compliance using the periodic sampling procedures in § 63.495(b), shall maintain the records specified in paragraph (b)(1), and in paragraph (b)(2) or (b)(3) of this section, as appropriate.

(1) Records associated with each sample taken in accordance with § 63.495(b). These records shall include the following for each sample:

(i) Elastomer type,

(ii) The date and time the sample was collected,

(iii) The corresponding quantity of elastomer processed over the time period represented by the sample. Acceptable methods of determining this quantity are production records, measurement of stream characteristics, and engineering calculations.

(A) For emulsion processes, this quantity shall be the weight of the latex leaving the stripper.

(B) For solution processes, this quantity shall be the crumb rubber dry weight of the rubber leaving the stripper.

(iv) The organic HAP content of each sample.

(2) The monthly weighted average organic HAP content, calculated in accordance with § 63.495(f).

(3) If the organic HAP contents for all samples analyzed during a month are below the appropriate level in § 63.494(a), the owner or operator may record that all samples were in accordance with the residual organic HAP limitations in § 63.494(a), rather than calculating and recording a monthly weighted average.

(c) Each owner or operator of a back-end process operation using stripping technology to comply with an emission limitation in § 63.494(a), and demonstrating compliance using the stripper parameter monitoring procedures in § 63.495(c), shall maintain the records specified in paragraphs (c)(1) through (c)(3) of this section.

(1) Records associated with the initial, and subsequent, determinations of the organic HAP content of each grade of elastomer produced. These records shall include the following:

(i) An identification of the elastomer type and grade;

(ii) The results of the residual organic HAP analyses, conducted in accordance with § 63.505(e)(1);

(iii) The stripper monitoring parameters required to be established in § 63.495(c)(1).

(iv) If re-determinations are made of the organic HAP content, and re-establishment of the stripper monitoring parameters, records of the initial determination are no longer required to be maintained.

(2) Records associated with each grade or batch. These records shall include the following for each grade or batch:

(i) Elastomer type and grade;

(ii) The quantity of elastomer processed;

(A) For emulsion processes, this quantity shall be the weight of the latex leaving the stripper.

(B) For solution processes, this quantity shall be the crumb rubber dry weight of the crumb rubber leaving the stripper.

(iii) The hourly average of all stripper parameter results;

(iv) If one or more hourly average stripper monitoring parameters is not

in accordance with the established levels, the results of the residual organic HAP analysis.

(3) The monthly weighted average organic HAP content, calculated in accordance with § 63.495(f).

(d) Each owner or operator of a back-end process operation using control or recovery devices to comply with an organic HAP emission limitation in § 63.494(a) shall maintain the records specified in paragraphs (d)(1) through (d)(5) of this section.

(1) Results of the testing required by § 63.496(b). These results shall include the following, for each of the three required test runs:

(i) The uncontrolled residual organic HAP content in the latex or dry crumb rubber, as required to be determined by § 63.496(b)(3), including the test results of the analysis;

(ii) The total quantity of material (weight of latex or dry crumb rubber) processed during the test run, recorded in accordance with § 63.496(b)(4),

(iii) The organic HAP emissions at the inlet and outlet of the control or recovery device, determined in accordance with § 63.496 (b)(5) through (b)(8), including all test results and calculations,

(iv) The residual organic HAP content, adjusted for the control or recovery device emission reduction, determined in accordance with § 63.496(c)(1).

(2) The operating parameter level established in accordance with § 63.497(c), along with supporting documentation.

(3) The following information when using a flare:

(i) The flare design (i.e., steam-assisted, air-assisted, or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination; and

(iii) All periods during the compliance determination when the pilot flame is absent.

(4) When using a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.

(5) Each owner or operator using a control or recovery device shall keep the following records up-to-date and readily accessible:

(i) Continuous records of the equipment operating parameters specified to be monitored under § 63.497(a) or specified by the Administrator in accordance with § 63.497(b). For flares, the hourly records and records of pilot flame outages shall be maintained in place of continuous records.

(ii) Records of the daily average value of each continuously monitored parameter for each operating day, except as provided in paragraphs (d)(5)(ii)(D) and (d)(5)(ii)(E) of this section.

(A) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day, except as provided in paragraph (d)(5)(ii)(B) of this section. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(B) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the hourly or daily averages. Records shall be kept of the times and durations of all such periods and any other periods of process or control device operation when monitors are not operating.

(C) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status in § 63.506(e)(8) or (e)(5). It may be from midnight to midnight or another 24-hour period.

(D) If all recorded values for a monitored parameter during an operating day are below the maximum, or above the minimum, level established in the Notification of Compliance Status in § 63.506(e)(5) or in the operating permit, the owner or operator may record that all values were below the maximum or above the minimum level, rather than calculating and recording a daily average for that operating day.

(E) For flares, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages. The records specified in this paragraph are not required during periods when emissions are not routed to the flare, or

during startups, shutdowns, or malfunctions when the owner or operator complies with the applicable requirements of subpart A of this part, as directed by § 63.506(b)(1).

(iii) Hourly records of whether the flow indicator specified under § 63.497(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.

(iv) Where a seal mechanism is used to comply with § 63.497(d)(2), or where computer monitoring of the position of the bypass damper or valve is used to comply with § 63.497(d)(3), hourly records of flow are not required.

(A) For compliance with § 63.497(d)(2), the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanisms has been done, and shall record instances when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has broken.

(B) For compliance with § 63.497(d)(3), the owner or operator shall record the times of all periods when the bypass line damper or valve position has changed.

§ 63.499 Back-end process provisions—reporting.

(a) The owner or operator of an affected source with back-end process operations shall submit the information required in § 63.498(a) as part of the Notification of Compliance Status specified in § 63.506(e)(5).

(b) Each owner or operator of a back-end process operation using stripping to comply with an emission limitation in § 63.494(a), and demonstrating compliance by stripper parameter monitoring, shall submit reports as specified in paragraphs (b)(1) and (b)(2) of this section.

(1) As part of the Notification of Compliance Status specified in § 63.506(e)(5), the owner or operator shall submit the information specified in § 63.498(c)(1).

(2) For organic HAP content/stripping monitoring parameter re-determinations, and the addition of new grades, the information specified in § 63.498(c)(1) shall be submitted in the next periodic report specified in § 63.506(e)(6).

(c) Each owner or operator of a back-end process operation control or recovery devices that must comply with an emission limitation in § 63.494(a) shall submit the information specified in paragraphs (c)(1) through (c)(3) of this section as part of the Notification of Compliance Status specified in § 63.506(e)(5).

(1) The residual organic HAP content, adjusted for the control or recovery device emission reduction, determined in accordance with § 63.496(c)(1), for each test run in the compliance determination.

(2) The operating parameter level established in accordance with § 63.497(c), along with supporting documentation.

(3) The information specified in § 63.498(d)(3) regarding flares and § 63.498(d)(4) regarding boilers and process heaters, if applicable.

(d) Whenever a process change, as defined in § 63.496(d), is made that causes the redetermination of the compliance status for the back-end process operations, the owner or operator shall submit a report within 180 calendar days after the process change as specified in § 63.506(e)(7)(iii). The report shall include:

(1) A description of the process change;

(2) The results of the redetermination of the compliance status, determined in accordance with § 63.496(b), and recorded in accordance with § 63.498(d)(1), and

(3) Documentation of the re-establishment of a parameter level for the control or recovery device, defined as either a maximum or minimum operating parameter, that indicates proper operation of the control or recovery device, in accordance with § 63.497(c) and recorded in accordance with § 63.498(d)(2).

(e) If an owner or operator uses a control or recovery device other than those listed in § 63.497(a) or requests approval to monitor a parameter other than those specified in § 63.497(a), the

owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under § 63.506(e)(3) or (e)(8). The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Precompliance Report or Operating Permit application.

§ 63.500 Back-end process provisions—carbon disulfide limitations for styrene butadiene rubber by emulsion processes.

(a) Owners or operators of sources subject to this subpart producing styrene butadiene rubber using an emulsion process shall operate the process such that the carbon disulfide concentration in each crumb dryer exhausts shall not exceed 45 ppmv.

(1) The owner or operator shall develop standard operating procedures for the addition of sulfur containing shortstop agents to ensure that the limitation in paragraph (a) of this section is maintained. There shall be a standard operating procedure representing the production of every grade of styrene butadiene rubber produced at the affected source using a sulfur containing shortstop agent.

(2) A validation of each standard operating procedure shall be conducted in accordance with paragraph (c) of this section, except as provided in paragraph (b) of this section, to demonstrate compliance with the limitation in paragraph (a) of this section.

(3) The owner or operator shall operate the process in accordance with a validated standard operating procedure at all times when styrene butadiene rubber is being produced using a sulfur containing shortstop agent. If a standard operating procedure is changed, it must be re-validated.

(4) Records specified in paragraph (d) of this section shall be maintained.

(5) Reports shall be submitted in accordance with paragraph (e) of this section.

(b) Crumb dryers that are vented to a combustion device are not subject to the provisions in this section.

(c) The owner or operator shall validate each standard operating procedure to determine compliance with the limitation in paragraph (a) of this section

using the testing procedures in paragraph (c)(1) of this section or engineering assessment, as described in paragraph (c)(2) of this section.

(1) The owner or operator shall conduct a performance test using the procedures in paragraphs (c)(1)(i) through (c)(1)(iii) of this section to demonstrate compliance with the carbon disulfide concentration limitation in paragraph (a) of this section. One test shall be conducted for each standard operating procedure.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as required, shall be used for selection of the sampling sites.

(ii) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as required.

(iii) To determine compliance with the carbon disulfide concentration limit in paragraph (a) of this section, the owner or operator shall use Method 18 or Method 25A of 40 CFR part 60, appendix A, to measure carbon disulfide. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part may be used. The following procedures shall be used to calculate carbon disulfide concentration:

(A) The minimum sampling time for each run shall be 1 hour, in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(B) The concentration of carbon disulfide shall be calculated using Equation 32.

$$C_{CS2} = \frac{\sum_{i=1}^n (C_{CS2i})}{n} \quad [\text{Eq. 32}]$$

where:

C_{CS2} =Concentration of carbon disulfide, dry basis, ppmv.

C_{CS2i} =Concentration of carbon disulfide of sample i, dry basis, ppmv.

n=Number of samples in the sample run.

(2) The owner or operator shall use engineering assessment to demonstrate

compliance with the carbon disulfide concentration limitation in paragraph (a) of this section. Engineering assessment includes, but is not limited to, the following:

(i) Previous test results, provided the tests are representative of current operating practices at the process unit.

(ii) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(iii) Flow rate and/or carbon disulfide emission rate specified or implied within an applicable permit limit.

(iv) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(A) Use of material balances,

(B) Estimation of flow rate based on physical equipment design such as pump or blower capacities, and

(C) Estimation of carbon disulfide concentrations based on saturation conditions.

(v) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(d) Owners and operators of sources subject to this section shall maintain the records specified in paragraphs (d)(1) and (d)(2) of this section.

(1) Documentation of the results of the testing required by paragraph (c) of this section.

(2) A description of the standard operating procedure used during the testing. This description shall include, at a minimum, an identification of the sulfur containing shortstop added to the styrene butadiene rubber prior to the dryers, an identification of the point and time in the process where the sulfur containing shortstop is added, and an identification of the amount of sulfur containing shortstop added per unit of latex.

(e) Owners and operators shall submit the reports as specified in paragraphs (e)(1) and (e)(2) of this section.

(1) As part of the Notification of Compliance Status specified in § 63.506(e)(5), documentation of the results of the testing required by paragraph (c) of this section.

(2) If changes are made in the standard operating procedure used during the compliance test and recorded in accordance with paragraph (d)(2) of this section, and if those changes have the potential for increasing the concentration of carbon disulfide in the crumb dryer exhaust to above the 45 ppmv limit, the owner or operator shall:

(i) Redetermine compliance using the test procedures in paragraph (c) of this section, and

(ii) Submit documentation of the testing results in the next periodic report required by § 63.506(e)(6).

§ 63.501 Wastewater provisions.

(a) For each process wastewater stream originating at an affected source, except those wastewater streams exempted by paragraph (c) of this section, the owner or operator shall comply with the requirements of §§ 63.131 through 63.148 of subpart G, with the differences noted in paragraphs (a)(1) through (a)(11) of this section, for the purposes of this subpart.

(1) When the determination of equivalence criteria in § 63.102(b) of subpart F is referred to in §§ 63.132, 63.133, and 63.137 of subpart G, the provisions in § 63.6(g) of subpart A shall apply for the purposes of this subpart.

(2) When the storage tank requirements contained in §§ 63.119 through 63.123 of subpart G are referred to in §§ 63.132 through 63.148 of subpart G, §§ 63.119 through 63.123 of subpart G are applicable, with the exception of the differences referred to in § 63.484, for the purposes of this subpart.

(3) When the Implementation Plan requirements contained in § 63.151 in subpart G are referred to in § 63.146 of subpart G, the owner or operator of an affected source subject to this subpart need not comply.

(4) When the Initial Notification Plan requirements in § 63.151(b) of subpart G are referred to in § 63.146 of subpart G, the owner or operator of an affected source subject to this subpart need not comply.

(5) When the owner or operator requests to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions referred to in § 63.151(g) of subpart G, or

the owner or operator submits an operating permit application instead of an Implementation Plan as specified in § 63.152(e) of subpart G, as referred to in § 63.146(a)(3) of subpart G, § 63.506(f) and § 63.506(e)(8), respectively, shall apply for the purposes of this subpart.

(6) When the Notification of Compliance Status requirements contained in § 63.152(b) of subpart G are referred to in §§ 63.146 and 63.147 of subpart G, the Notification of Compliance Status requirements contained in § 63.506(e)(5) shall apply for the purposes of this subpart.

(7) When the Periodic Report requirements contained in § 63.152(c) of subpart G are referred to in §§ 63.146 and 63.147 of subpart G, the Periodic Report requirements contained in § 63.506(e)(6) shall apply for the purposes of this subpart.

(8) When the term “range” is used in § 63.143(f) of subpart G, the term “level” shall be used instead, for the purposes of this subpart. This level shall be determined using the procedures specified in § 63.505.

(9) For the purposes of this subpart, owners or operators are not required to comply with the provisions of § 63.138(e)(2) of subpart G which specify that owners or operators shall demonstrate that 95 percent of the mass of HAP, as listed in Table 9 of subpart G, is removed from the wastewater stream or combination of wastewater streams by the procedure specified in § 63.145(i) of subpart G for a biological treatment unit.

(10) For the purposes of this subpart, owners or operators are not required to comply with the provisions of § 63.138(j)(3) of subpart G which specify that owners or operators shall use the procedures specified in Appendix C of subpart G to demonstrate compliance when using a biological treatment unit.

(11) When the provisions of § 63.139(c)(1)(ii) of subpart G or the provisions of § 63.145(e)(2)(ii)(B) specify that Method 18 shall be used, Method 18 or Method 25A may be used for the purposes of this subpart. The use of Method 25A shall comply with paragraphs (a)(11)(i) and (a)(11)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A shall be the

single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(b) Except for those streams exempted by paragraph (c) of this section, the owner or operator of each affected source shall comply with the requirements for maintenance wastewater in § 63.105 of subpart F, except that when § 63.105(a) refers to “organic HAPs,” the definition of organic HAP in § 63.482 shall apply for the purposes of this subpart.

(c) The following wastewater streams are exempt from the requirements of paragraphs (a) and (b) of this section:

(1) Back-end wastewater streams originating from equipment that only produces latex products.

(2) Back-end wastewater streams at affected sources that are subject to a residual organic HAP limitation in § 63.494(a), and that are complying with these limitations through the use of stripping technology.

(d) The compliance date for the affected source subject to the provisions of this section is specified in § 63.481.

§ 63.502 Equipment leak provisions.

(a) The owner or operator of each affected source shall comply with the requirements of subpart H of this part for all equipment in organic HAP service, with the exceptions noted in paragraphs (b) through (j) of this section.

(b) Surge control vessels and bottoms receivers described in paragraphs (b)(1) through (b)(6) of this section are exempt from the requirements contained in § 63.170 of subpart H.

(1) Surge control vessels and bottoms receivers containing styrene-butadiene latex;

(2) Surge control vessels and bottoms receivers containing other latex products and located downstream of the stripping operations;

(3) Surge control vessels and bottoms receivers containing high conversion latex products;

(4) Surge control vessels and bottoms receivers located downstream of the stripping operations at affected sources subject to the back-end residual organic HAP limitation located in § 63.494, that are complying through the use of stripping technology, as specified in § 63.495;

(5) Surge control vessels and bottoms receivers containing styrene;

(6) Surge control vessels and bottoms receivers containing acrylamide; and

(7) Surge control vessels and bottoms receivers containing epichlorohydrin.

(c) The compliance date for the equipment leak provisions in this section is provided in § 63.481.

(d) For an affected source producing polybutadiene rubber and styrene butadiene rubber by solution, the indications of liquids dripping, as defined in subpart H of this part, from bleed ports in pumps and agitator seals in light liquid service, shall not be considered a leak. For the purposes of this subpart, a "bleed port" is a technologically-required feature of the pump or seal whereby polymer fluid used to provide lubrication and/or cooling of the pump or agitator shaft exits the pump, thereby resulting in a visible dripping of fluid.

(e) Affected sources subject to subpart I of this part shall continue to comply with subpart I until the compliance date specified in § 63.481. After the compliance date for this section, the source shall be subject to subpart H of this part and shall no longer be subject to subpart I.

(f) The owner or operator of each affected source shall comply with the requirements of § 63.104 of subpart F for heat exchange systems.

(g) Owners and operators of an affected source subject to this subpart are not required to submit the Initial Notification required by § 63.182(a)(1) and § 63.182(b) of subpart H.

(h) The Notification of Compliance Status required by § 63.182(a)(2) and § 63.182(c) of subpart H shall be submitted within 150 days (rather than 90 days) of the applicable compliance date specified in § 63.481 for the equipment leak provisions. The notification can be submitted as part of the Notification of Compliance Status required by § 63.506(e)(5).

(i) The Periodic Reports required by § 63.182(a)(3) and § 63.182(d) of subpart H shall be submitted as part of the Periodic Reports required by § 63.506(e)(6).

(j) The owner or operator of each affected source shall substitute the phrase "the provisions of subparts F, I, or U of this part" for both the phrases "the provisions of subparts F or I of this part" and the phrase "the provisions of subpart F or I of this part" throughout §§ 63.163 and 63.168, for the purposes of this subpart. In addition, the owner or operator of each affected source shall substitute the phrase "subparts F, I, and U" for the phrase "subparts F and I" in § 63.174(c)(2)(iii), for the purposes of this subpart.

[62 FR 46925, Sept. 5, 1996, as amended at 62 FR 37722, July 15, 1997]

§ 63.503 Emissions averaging provisions.

(a) This section applies to owners or operators of existing affected sources who seek to comply with § 63.483(b) by using emissions averaging rather than following the provisions of §§ 63.484, 63.485, 63.486, 63.494, and 63.488.

(1) The following emission point limitations apply to the use of these provisions:

(i) All emission points included in an emissions average shall be from the same affected source. There may be an emissions average for each individual affected source located at a plant site.

(ii)(A) If a plant site has only one affected source for which emissions averaging is being used to demonstrate compliance, the number of emission points allowed to be included in the emission average is limited to twenty. This number may be increased by up to five additional points if pollution prevention measures are used to control five or more of the emission points included in the emissions average.

(B) If a plant site has two or more affected sources for which emissions averaging is being used to demonstrate compliance, the number of emission points allowed in the emissions average for those affected sources is limited to twenty. This number may be increased by up to five additional emission points if pollution prevention measures are used to control five or more of the

emission points included in the emissions averages.

(2) Compliance with the provisions of this section can be based on either organic HAP or TOC.

(3) For the purposes of these provisions, whenever Method 18 is specified within the paragraphs of this section or is specified by reference through provisions outside this section, Method 18 or Method 25A may be used. The use of Method 25A shall comply with paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A shall be the single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(b) Unless an operating permit application has been submitted, the owner or operator shall develop and submit for approval an Emissions Averaging Plan containing all of the information required in § 63.506(e)(4) for all emission points to be included in an emissions average.

(c) Paragraphs (c)(1) through (c)(4) of this section describe the emission points that can be used to generate emissions averaging credits if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point. Paragraph (c)(5) of this section discusses the use of pollution prevention in generating emissions averaging credits.

(1) Storage vessels, batch front-end process vents, aggregate batch vent streams, continuous front-end process vents, and process wastewater streams that are determined to be Group 2 emission points.

(2) Storage vessels, continuous front-end process vents, and process wastewater streams that are determined to be Group 1 emission points and that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology.

Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section.

(3) Batch front-end process vents and aggregate batch vent streams that are determined to be Group 1 emission points and that are controlled to a level more stringent than the applicable standard.

(4) Back-end process operations that are controlled such that organic HAP emissions from the back-end process operation are less than would be achieved by meeting the residual organic HAP limits in § 63.494. For the purposes of the emission averaging provisions in this section, all back-end process operations at an affected facility shall be considered a single emission point.

(5) The percent reduction for any storage vessel, batch front-end process vent, aggregate batch vent stream, continuous front-end process vent, and process wastewater stream shall be determined using the procedures specified in paragraph (j) of this section.

(i) For a Group 1 storage vessel, batch front-end process vent, aggregate batch vent stream, continuous front-end process vent, or process wastewater stream, the pollution prevention measure must reduce emissions more than if the reference control technology or standard had been applied to the emission point instead of the pollution prevention measure, except as provided in paragraph (c)(5)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 storage vessel, batch front-end process vent, aggregate batch vent stream, continuous front-end process vent, or process wastewater stream, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology or standard, but the combination of the pollution prevention measure and other controls must reduce emissions more than if the applicable reference control technology or standard had been applied instead of the pollution prevention measure.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990 cannot be used to generate credits unless the level of control was increased after November 15, 1990. In this case, credit will be allowed only for the increase in control after November 15, 1990.

(2) Group 1 emission points, identified in paragraph (c)(2) of this section, that are controlled by a reference control technology cannot be used to generate credits unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section.

(3) Emission points on nonoperating EPPU cannot be used to generate credits. EPPU that are shutdown cannot be used to generate credits or debits.

(4) Maintenance wastewater cannot be used to generate credits. Wastewater streams treated in biological treatment units cannot be used to generate credits. These two types of wastewater cannot be used to generate credits or debits. For the purposes of this section, the terms wastewater and wastewater stream are used to mean process wastewater.

(5) Emission points controlled to comply with a State or Federal rule other than this subpart cannot be used to generate credits, unless the level of control has been increased after November 15, 1990 to a level above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the emission point is subsequently made subject to a State or Federal rule other than this subpart, the emission point can continue to generate emissions averaging credit for the purpose of complying with the previously approved emissions average.

(e) For all emission points included in an emissions average, the owner or operator shall perform the following tasks:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent

than the reference control technology or standard for those emission points. The Group 1 emission points are identified in paragraphs (c)(2) through (c)(4) of this section. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 and Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The owner or operator may choose to include more than the required number of credit-generating emission points in an emissions average in order to increase the likelihood of being in compliance.

(ii) The initial demonstration in the Emissions Averaging Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions. After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in § 63.506(e)(6). Every fourth Periodic Report shall include a certification of

compliance with the emissions averaging provisions as required by § 63.506(e)(6)(vi)(D)(2).

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions during the following periods:

(1) Emissions during periods of startup, shutdown, and malfunction as described in the Startup, Shutdown, and Malfunction Plan.

(2) Emissions during periods of monitoring excursions, as defined in § 63.505 (g) or (h). For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(2)(i) through (f)(2)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in paragraph (l) of this section.

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology or standard and the emissions allowed for the Group 1 emission point. Debits shall be calculated as follows:

(1) Source-wide debits shall be calculated using Equation 33. Debits and all terms of the equation are in units of megagrams per month (Mg/month).

$$\begin{aligned} \text{Debits} = & \sum_{i=1}^n (\text{ECFEPV}_{i\text{ACTUAL}} - (0.02)\text{ECFEPV}_{i\text{u}}) \\ & + \sum_{i=1}^n (\text{ES}_{i\text{ACTUAL}} - (0.05)\text{ES}_{i\text{u}}) + (\text{EBEP}_{\text{ACTUAL}} - \text{EBEP}_{\text{c}}) \\ & + \sum_{i=1}^n (\text{EWW}_{i\text{ACTUAL}} - \text{EWW}_{\text{ic}}) + \sum_{i=1}^n (\text{EBFEPV}_{i\text{ACTUAL}} - (0.1)\text{EBFEPV}_{i\text{u}}) \quad [\text{Eq. 33}] \\ & + \sum_{i=1}^n (\text{EABV}_{i\text{ACTUAL}} - (0.1)\text{EABV}_{i\text{u}}) \end{aligned}$$

where:

$\text{ECFEPV}_{i\text{ACTUAL}}$ =Emissions from each Group 1 continuous front-end process vent i that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. $\text{ECFEPV}_{i\text{ACTUAL}}$ is calculated according to paragraph (g)(2)(iii) of this section.

$(0.02)\text{ECFEPV}_{i\text{u}}$ =Emissions from each Group 1 continuous front-end process vent i if the applicable reference control technology had been applied to the uncontrolled emissions. $\text{ECFEPV}_{i\text{u}}$ is calculated according to paragraph (g)(2)(ii) of this section.

$\text{ES}_{i\text{ACTUAL}}$ =Emissions from each Group 1 storage vessel i that is uncon-

trolled or is controlled to a level less stringent than the applicable reference control technology or standard. $\text{ES}_{i\text{ACTUAL}}$ is calculated according to paragraph (g)(3) of this section.

$(0.05)\text{ES}_{i\text{u}}$ =Emissions from each Group 1 storage vessel i if the applicable reference control technology or standard had been applied to the uncontrolled emissions. $\text{ES}_{i\text{u}}$ is calculated according to paragraph (g)(3) of this section.

$\text{EBEP}_{\text{ACTUAL}}$ =Emissions from back-end process operations that do not meet the residual organic HAP limits in § 63.494. $\text{EBEP}_{\text{ACTUAL}}$ is calculated according to paragraph (g)(4)(i) of this section.

EBEP_c=Emissions from back-end process operations if the residual organic HAP limits in §63.494(a) were met. EBEP_c is calculated according to paragraph (g)(4)(ii) of this section.

EWV_{iACTUAL}=Emissions from each Group 1 wastewater stream i that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. EWV_{iACTUAL} is calculated according to paragraph (g)(5) of this section.

EWV_{ic}=Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. EWV_{ic} is calculated according to paragraph (g)(5) of this section.

EBFEPV_{iACTUAL}=Emissions from each Group 1 batch front-end process vent stream i that is uncontrolled or is controlled to a level less stringent than the reference control technology. EBFEPV_{iACTUAL} is calculated according to paragraph (g)(6)(ii) of this section.

(0.1)EBFEPV_{iu}=Emissions from each Group 1 batch front-end process vent i if the applicable reference control technology or standard had been applied to the uncontrolled emissions. EBFEPV_{iu} is calculated according to paragraph (g)(6)(i) of this section.

EABV_{iACTUAL}=Emissions from each Group 1 aggregate batch vent stream i that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. EABV_{iACTUAL} is calculated according to paragraph (g)(7)(iii) of this section.

(0.1)EABV_{iu}=Emissions from each Group 1 aggregate batch vent stream i if the applicable reference control technology had been applied to the uncontrolled emissions. EABV_{iu} is calculated according to paragraph (g)(7)(ii) of this section.

n=The number of emission points being included in the emissions average.

(2) Emissions from continuous front-end process vents shall be calculated as follows:

(i) For purposes of determining continuous front-end process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for continuous front-end process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A of 40 CFR part 60, appendix A, shall be used for selection of the sampling site.

(ii) ECFEPV_{iu} for each continuous front-end process vent i shall be calculated using Equation 34.

$$ECFEPV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right) \quad [\text{Eq. 34}]$$

where:

ECFEPV_{iu}=Uncontrolled continuous front-end process vent emission rate from continuous front-end process vent i, Mg/month.

Q=Vent stream flow rate, dry standard m³/min, measured using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

h=Monthly hours of operation during which positive flow is present in the continuous front-end process vent, hr/month.

C_j=Concentration, ppmv, dry basis, of organic HAP j as measured by Method 18 or Method 25A of 40 CFR part 60, appendix A.

M_j=Molecular weight of organic HAP j, gram per gram-mole.

n=Number of organic HAP in stream.

(A) The values of Q and C_j shall be determined during a performance test conducted under representative operating conditions. The values of Q and C_j shall be established in the Notification

of Compliance Status and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q and C_j are no longer representative, a new performance test shall be conducted to determine new representative values of Q and C_j . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $ECFEPV_{iACTUAL}$:

(A) If the continuous front-end process vent is not controlled by a control device or pollution prevention measure, $ECFEPV_{iACTUAL} = ECFEPV_{iu}$, where $ECFEPV_{iu}$ is calculated according to the procedures contained in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the continuous front-end process vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction, $ECFEPV_{iACTUAL}$ is calculated using Equation 35.

$$ECFEPV_{iACTUAL} = ECFEPV_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 35}]$$

Where:

$ECFEPV_{iACTUAL}$ = Emissions from each Group 1 continuous front-end process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology.

$ECFEPV_{iu}$ = Uncontrolled continuous front-end process vent emission rate from continuous front-end process vent i , Mg/month.

(1) The percent reduction shall be measured according to the procedures in §63.116 of subpart G if a combustion control device is used. For a flare meeting the criteria in §63.116(a) of subpart G, or a boiler or process heater meeting the criteria in §63.116(b) of subpart G, the percent reduction shall be 98 percent. If a noncombustion control device is used, percent reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(2) For determining debits from Group 1 continuous front-end process vents, product recovery devices shall not be considered control devices and

cannot be assigned a percent reduction in calculating $ECFEPV_{iACTUAL}$. The sampling site for measurement of uncontrolled emissions is after the final product recovery device. However, as provided in §63.113(a)(3) of subpart G, a Group 1 continuous front-end process vent may add sufficient product recovery to raise the TRE index value above 1.0, thereby becoming a Group 2 continuous front-end process vent. Such a continuous front-end process vent would not be a Group 1 continuous front-end process vent and would, therefore, not be included in determining debits under this paragraph.

(3) Procedures for calculating the percent reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated using the procedures specified in §63.150(g)(3) of subpart G.

(4) Emissions from back-end process operations shall be calculated as follows:

(i) Equation 36 shall be used to calculate $EBEP_{ACTUAL}$:

$$\text{EBEP}_{\text{ACTUAL}} = (1,000) \sum_{i=1}^n (C_i)(P_i) \quad [\text{Eq. 36}]$$

where:

$\text{EBEP}_{\text{ACTUAL}}$ = Actual emissions from back-end process operations, Mg/month.

C_i = Residual organic HAP content of sample i , kg organic HAP per Mg latex or dry crumb rubber.

P_i = Weight of latex or dry crumb rubber leaving the stripper represented by sample i , Mg.

(ii) Equation 37 shall be used to calculate EBEP_c :

$$\text{EBEP}_c = (1,000)(\text{HAP}_{\text{limit}})(P_{\text{month}}) \quad [\text{Eq. 37}]$$

where:

EBEP_c = Emissions from back-end process operations if the residual organic HAP limits in § 63.494(a) were met, Mg/month.

$\text{HAP}_{\text{limit}}$ = Residual organic HAP limits in § 63.494 of this subpart, kg organic HAP per Mg latex or dry crumb rubber.

P_{month} = Weight of latex or dry crumb rubber leaving the stripper in the month, Mg.

(5) Emissions from wastewater shall be calculated using the procedures specified in § 63.150(g)(5) of subpart G.

(6) Emissions from batch front-end process vents shall be calculated as follows:

(i) EBFEPV_{iu} for each batch front-end process vent i shall be calculated using the procedures specified in § 63.488(b).

(ii) The following procedures and equations shall be used to determine $\text{EBFEPV}_{i\text{ACTUAL}}$:

(A) If the batch front-end process vent is not controlled by a control device or pollution prevention measure, $\text{EBFEPV}_{i\text{ACTUAL}} = \text{EBFEPV}_{iu}$, where EBFEPV_{iu} is calculated according to the procedures in § 63.488(b).

(B) If the batch front-end process vent is controlled using a control device or a pollution prevention measure achieving less than 90 percent reduction for the batch cycle, calculate $\text{EBFEPV}_{i\text{ACTUAL}}$ using Equation 38, where percent reduction is for the batch cycle.

$$\text{EBFEPV}_{i\text{ACTUAL}} = \text{EBFEPV}_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 38}]$$

(1) The percent reduction for the batch cycle shall be measured according to the procedures in § 63.490(c)(2).

(2) The percent reduction for control devices shall be calculated according to the procedures in § 63.490 (c)(2)(i) through (c)(2)(iii).

(3) The percent reduction of pollution prevention measures shall be calculated using the procedures specified in paragraph (j) of this section.

(7) Emissions from aggregate batch vents shall be calculated as follows:

(i) For purposes of determining aggregate batch vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be before any control device and before discharge to the atmosphere. Method 1 or 1A of 40 CFR part 60, appendix A, shall be used for selection of the sampling site.

(ii) $EABV_{iu}$ for each aggregate batch vent i shall be calculated using Equation 39.

$$EABV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right) \quad [\text{Eq. 39}]$$

where:

$EABV_{iu}$ =Uncontrolled aggregate batch vent emission rate from aggregate batch vent i , Mg/month.

Q =Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

h =Monthly hours of operation during which positive flow is present from the aggregate batch vent stream, hr/month.

C_j =Concentration, ppmv, dry basis, of organic HAP j as measured by Method 18 of 40 CFR part 60, appendix A.

M_j =Molecular weight of organic HAP j , gram per gram-mole.

n =Number of organic HAP in the stream.

(A) The values of Q and C_j shall be determined during a performance test conducted under representative operating conditions. The values of Q and C_j shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(7)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in

monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q and C_j are no longer representative, a new performance test shall be conducted to determine new representative values of Q and C_j . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $EABV_{iACTUAL}$:

(A) If the aggregate batch vent is not controlled by a control device or pollution prevention measure, $EABV_{iACTUAL} = EABV_{iu}$, where $EABV_{iu}$ is calculated according to the procedures in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

(B) If the aggregate batch vent stream is controlled using a control device or a pollution prevention measure achieving less than 90 percent reduction, calculate $EABV_{iACTUAL}$ using Equation 40.

$$EABV_{iACTUAL} = EABV_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 40}]$$

(f) The percent reduction for control devices shall be determined according to the procedures in § 63.490(e).

(2) The percent reduction of pollution prevention measures shall be calculated according to the procedures specified in paragraph (j) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from that Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this

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subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) Source-wide credits shall be calculated using Equation 41. Credits and

all terms of the equation are in units of Mg/month, and the baseline date is November 15, 1990.

$$\begin{aligned}
 \text{Credits} = & D \sum_{i=1}^n ((0.02) \text{ECFEPV1}_{i\text{u}} - \text{ECFEPV1}_{i\text{ACTUAL}}) + D \sum_{i=1}^m (\text{ECFEPV2}_{i\text{BASE}} - \text{ECFEPV2}_{i\text{ACTUAL}}) \\
 & + D \sum_{i=1}^n ((0.05) \text{ES1}_{i\text{u}} - \text{ES1}_{i\text{ACTUAL}}) + D \sum_{i=1}^m (\text{ES2}_{i\text{BASE}} - \text{ES2}_{i\text{ACTUAL}}) + D (\text{EBEP}_{\text{c}} - \text{EBEP}_{\text{ACTUAL}}) \\
 & + D \sum_{i=1}^n (\text{EWW1}_{i\text{c}} - \text{EWW1}_{i\text{ACTUAL}}) + D \sum_{i=1}^m (\text{EWW2}_{i\text{BASE}} - \text{EWW2}_{i\text{ACTUAL}}) \quad [\text{Eq. 41}] \\
 & + D \sum_{i=1}^n ((0.1) \text{EBFEPV1}_{i\text{u}} - \text{EBFEPV1}_{i\text{ACTUAL}}) + D \sum_{i=1}^n ((0.1) \text{EABV1}_{i\text{u}} - \text{EABV1}_{i\text{ACTUAL}}) \\
 & + D \sum_{i=1}^m (\text{EBFEPV2}_{i\text{BASE}} - \text{EBFEPV2}_{i\text{ACTUAL}}) + D \sum_{i=1}^m (\text{EABV2}_{i\text{BASE}} - \text{EABV2}_{i\text{ACTUAL}})
 \end{aligned}$$

where:

D = Discount factor = 0.9 for all credit generating emission points, except those controlled by a pollution prevention measure; discount factor = 1.0 for each credit generating emission point controlled by a pollution prevention measure (i.e., no discount provided).

$\text{ECFEPV1}_{i\text{ACTUAL}}$ = Emissions for each Group 1 continuous front-end process vent i that is controlled to a level more stringent than the reference control technology. $\text{ECFEPV1}_{i\text{ACTUAL}}$ is calculated according to paragraph (h)(2)(ii) of this section.

$(0.02)\text{ECFEPV1}_{i\text{u}}$ = Emissions from each Group 1 continuous front-end process vent i if the reference control technology had been applied to the uncontrolled emissions. $\text{ECFEPV1}_{i\text{u}}$ is calculated according to paragraph (h)(2)(i) of this section.

$\text{ECFEPV2}_{i\text{ACTUAL}}$ = Emissions from each Group 2 continuous front-end process vent i that is controlled. $\text{ECFEPV2}_{i\text{ACTUAL}}$ is calculated according to paragraph (h)(2)(iii) of this section.

$\text{ECFEPV2}_{i\text{BASE}}$ = Emissions from each Group 2 continuous front-end process vent i at the baseline date. $\text{ECFEPV2}_{i\text{BASE}}$ is calculated in paragraph (h)(2)(iv) of this section.

$\text{ES1}_{i\text{ACTUAL}}$ = Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology or standard. $\text{ES1}_{i\text{ACTUAL}}$ is calculated according to paragraph (h)(3) of this section.

$(0.05) \text{ES1}_{i\text{u}}$ = Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. $\text{ES1}_{i\text{u}}$ is calculated according to paragraph (h)(3) of this section.

$\text{ES2}_{i\text{ACTUAL}}$ = Emissions from each Group 2 storage vessel i that is controlled. $\text{ES2}_{i\text{ACTUAL}}$ is calculated according to paragraph (h)(3) of this section.

$\text{ES2}_{i\text{BASE}}$ = Emissions from each Group 2 storage vessel i at the baseline date. $\text{ES2}_{i\text{BASE}}$ is calculated in paragraph (h)(3) of this section.

$\text{EBEP}_{\text{ACTUAL}}$ = Actual emissions from back-end process operations, Mg/month. $\text{EBEP}_{\text{ACTUAL}}$ is calculated in paragraph (h)(4)(i) of this section.

EBEP_{c} = Emissions from back-end process operations if the residual organic HAP limits in §63.494(a) were met, Mg/month. EBEP_{c} is calculated in paragraph (h)(4)(ii) of this section.

$\text{EWW1}_{i\text{ACTUAL}}$ = Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent

than the reference control technology. $EW\bar{W}1_{iACTUAL}$ is calculated according to paragraph (h)(5) of this section.

$EW\bar{W}1_{ic}$ = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. $EW\bar{W}1_{ic}$ is calculated according to paragraph (h)(5) of this section.

$EW\bar{W}2_{iACTUAL}$ = Emissions from each Group 2 wastewater stream i that is controlled. $EW\bar{W}2_{iACTUAL}$ is calculated according to paragraph (h)(5) of this section.

$EW\bar{W}2_{iBASE}$ = Emissions from each Group 2 wastewater stream i at the baseline date. $EW\bar{W}2_{iBASE}$ is calculated according to paragraph (h)(5) of this section.

(0.1) $EBFEPV1_{iu}$ = Emissions from each Group 1 batch front-end process vent i if the applicable reference control technology had been applied to the uncontrolled emissions. $EBFEPV1_{iu}$ is calculated according to paragraph (h)(6)(i) of this section.

$EBFEPV1_{iACTUAL}$ = Emissions from each Group 1 batch front-end process vent i that is controlled to a level more stringent than the reference control technology. $EBFEPV1_{iACTUAL}$ is calculated according to paragraph (h)(6)(ii) of this section.

(0.1) $EABV1_{iu}$ = Emissions from each Group 1 aggregate batch vent stream i if the applicable reference control technology had been applied to the uncontrolled emissions. $EABV1_{iu}$ is calculated according to paragraph (h)(7)(i) of this section.

$EABV1_{iACTUAL}$ = Emissions from each Group 1 aggregate batch vent stream i that is controlled to a level more stringent than the reference control technology or standard. $EABV1_{iACTUAL}$ is calculated according to paragraph (h)(7)(ii) of this section.

$EBFEPV2_{iBASE}$ = Emissions from each Group 2 batch front-end process vent i at the baseline date. $EBFEPV2_{iBASE}$ is calculated according to paragraph (h)(6)(iv) of this section.

$EBFEPV2_{iACTUAL}$ = Emissions from each Group 2 batch front-end process vent i that is controlled. $EBFEPV2_{iACTUAL}$ is calculated according to paragraph (h)(6)(iii) of this section.

$EABV2_{iBASE}$ = Emissions from each Group 2 aggregate batch vent stream i at the baseline date. $EABV2_{iBASE}$ is calculated according to paragraph (g)(7)(iv) of this section.

$EABV2_{iACTUAL}$ = Emissions from each Group 2 aggregate batch vent stream i that is controlled. $EABV2_{iACTUAL}$ is calculated according to paragraph (g)(7)(iii) of this section.

n = Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for continuous front-end process vents, batch front-end process vents, aggregate batch vent streams, storage vessels, wastewater streams, or the collection of process sections within the affected source.

m = Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for continuous front-end process vents, batch front-end process vents, aggregate batch vent streams, storage vessels, wastewater streams, or the collection of process sections within the affected source.

(i) Except as specified in paragraph (h)(1)(iv) of this section, for an emission point controlled using a reference control technology, the percent reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section. A reference control technology

may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedure in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, except for back-end process operation emissions, the nominal efficiency for calculating credits shall be as determined as described in paragraph (j) of this section. Emissions for back-end process operations shall be determined as described in paragraph (h)(4) of this section.

(iv) For Group 1 and Group 2 batch front-end process vents and Group 1 and Group 2 aggregate batch vent streams, the percent reduction for calculating credits shall be the percent reduction determined according to the procedures in paragraphs (h)(6)(ii) and (h)(6)(iii) of this section for batch

front-end process vents and paragraphs (h)(7)(ii) and (h)(7)(iii) of this section for aggregate batch vent streams.

(2) Emissions from continuous front-end process vents shall be determined as follows:

(i) Uncontrolled emissions from Group 1 continuous front-end process vents, $ECFEPV1_{iu}$, shall be calculated according to the procedures and equation for $ECFEPV_{iu}$ in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from Group 1 continuous front-end process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $ECFEPV1_{iACTUAL}$, shall be calculated using Equation 42.

$$ECFEPV1_{iACTUAL} = ECFEPV1_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right) \quad [\text{Eq. 42}]$$

Where:

$ECFEPV1_{iACTUAL}$ = Emissions for each Group 1 continuous front-end process vent i that is controlled to a level more stringent than the reference control technology.

$ECFEPV1_{iu}$ = Emissions from each Group 1 continuous front-end process vent i if the reference control technology had been applied to the uncontrolled emissions.

(iii) The following procedures shall be used to calculate actual emissions from Group 2 continuous front-end process vents, $ECFEPV2_{iACTUAL}$:

(A) For a Group 2 continuous front-end process vent controlled by a control device, a recovery device applied as a pollution prevention project, or a pollution prevention measure, where the control achieves a percent reduction less than or equal to 98 percent reduction, Equation 43 shall be used.

$$ECFEPV2_{iACTUAL} = ECFEPV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 43}]$$

Where:

$ECFEPV2_{iACTUAL}$ = Emissions from each Group 2 continuous front-end process vent i that is controlled.

$ECFEPV2_{iu}$ = Emissions from each Group 2 continuous front-end process vent i if the reference control tech-

nology had been applied to the uncontrolled emissions.

(f) $ECFEPV2_{iu}$ shall be calculated according to the equations and procedures for $ECFEPV_{iu}$ in paragraphs (g)(2)(i) and (g)(2)(ii) of this section, except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section, except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(3) If a recovery device was added as part of a pollution prevention project, ECFEPV_{2iu} shall be calculated prior to that recovery device. The equation for ECFEPV_{2iu} in paragraph (g)(2)(ii) of this section shall be used to calculate ECFEPV_{2iu}; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration

shall be at the inlet of the recovery device.

(4) If a recovery device was added as part of a pollution prevention project, the percent reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 continuous front-end process vent controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction, Equation 44 shall be used.

$$ECFEPV2_{iACTUAL} = ECFEPV2_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right) \quad [\text{Eq. 44}]$$

Where:

ECFEPV_{2iACTUAL}=Emissions from each Group 2 continuous front-end process vent i that is controlled.

ECFEPV_{2iu}=Emissions from each Group 2 continuous front-end process vent i if the reference control technology had been applied to the uncontrolled emissions.

(iv) Emissions from Group 2 continuous front-end process vents at baseline,

ECFEPV_{2iBASE}, shall be calculated as follows:

(A) If the continuous front-end process vent was uncontrolled on November 15, 1990, ECFEPV_{2iBASE}=ECFEPV_{2iu} and shall be calculated according to the procedures and equation for ECFEPV_{2iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the continuous front-end process vent was controlled on November 15, 1990, Equation 45 shall be used.

$$ECFEPV2_{iBASE} = ECFEPV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 45}]$$

(1) ECFEPV_{2iu} is calculated according to the procedures and equation for ECFEPV_{2iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(2) The percent reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added as part of a pollution prevention project initiated after November 15, 1990, ECFEPV_{2iBASE}=ECFEPV_{2iu}, where ECFEPV_{2iu} is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from storage vessels shall be calculated using the procedures specified in §63.150(h)(3) of subpart G.

(4) Emissions from back-end process operations shall be calculated as follows:

(i) EBEP_{ACTUAL} shall be calculated according to the equation for EBEP_{ACTUAL} contained in paragraph (g)(4)(i) of this section.

(ii) EBEP_c shall be calculated according to the equation for EBEP_c contained in paragraph (g)(4)(ii) of this section.

(5) Emissions from wastewater streams shall be calculated using the procedures specified in § 63.150(h)(5) of subpart G.

(6) Emissions from batch front-end process vents shall be determined as follows:

(i) Uncontrolled emissions from Group 1 batch front-end process vents ($EBFEPV1_{iu}$) shall be calculated ac-

cording using the procedures specified in § 63.488(b).

(ii) Actual emissions from Group 1 batch front-end process vents controlled to a level more stringent than the reference control technology ($EBFEPV1_{iACTUAL}$) shall be calculated using Equation 46, where percent reduction is for the batch cycle.

$$EBFEPV1_{iACTUAL} = EBFEPV1_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 46}]$$

(A) The percent reduction for the batch cycle shall be calculated according to the procedures in § 63.490(c)(2).

(B) The percent reduction for control devices shall be determined according to the procedures in § 63.490(c)(2)(i) through (c)(2)(iii).

(C) The percent reduction of pollution prevention measures shall be cal-

culated using the procedures specified in paragraph (j) of this section.

(iii) Actual emissions from Group 2 batch front-end process vents ($EBFEPV2_{iACTUAL}$) shall be calculated using Equation 47 and the procedures in paragraphs (h)(6)(ii)(A) through (h)(6)(ii)(C) of this section. $EBFEPV2_{iu}$ shall be calculated using the procedures specified in § 63.488(b).

$$EBFEPV2_{iACTUAL} = EBFEPV2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 47}]$$

(iv) Emissions from Group 2 batch front-end process vents at baseline shall be calculated as follows:

(A) If the batch front-end process vent was uncontrolled on November 15, 1990, $EBFEPV2_{iBASE} = EBFEPV2_{iu}$ and shall be calculated according to the procedures using the procedures specified in § 63.488(b).

(B) If the batch front-end process vent was controlled on November 15, 1990, use Equation 48 and the procedures in paragraphs (h)(6)(ii)(A) through (h)(6)(ii)(C) of this section. $EBFEPV2_{iu}$ shall be calculated using the procedures specified in § 63.488(b).

$$EBFEPV2_{iBASE} = EBFEPV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 48}]$$

(7) Emissions from aggregate batch vent streams shall be determined as follows:

(i) Uncontrolled emissions from Group 1 aggregate batch vent streams ($EABV1_{iu}$) shall be calculated according

to the procedures and equation for $EABV_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

(ii) Actual emissions from Group 1 aggregate batch vent streams controlled to a level more stringent than

the reference control technology ($EABV1_{iACTUAL}$) shall be calculated using Equation 49.

$$EABV1_{iACTUAL} = EABV1_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 49}]$$

(A) The percent reduction for control devices shall be determined according to the procedures in §63.490(e).

(B) The percent reduction of pollution prevention measures shall be calculated using the procedures specified in paragraph (j) of this section.

(iii) Actual emissions from Group 2 aggregate batch vents streams

($EABV2_{iACTUAL}$) shall be calculated using Equation 50 and the procedures in paragraphs (h)(7)(ii)(A) through (h)(7)(ii)(B) of this section. $EABV2_{iu}$ shall be calculated according to the equations and procedures for $EABV_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

$$EABV2_{iACTUAL} = EABV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 50}]$$

(iv) Emissions from Group 2 aggregate batch vent streams at baseline shall be calculated as follows:

(A) If the aggregate batch vent stream was uncontrolled on November 15, 1990, $EABV2_{iBASE} = EABV2_{iu}$ and shall be calculated according to the procedures and equation for $EABV_{iu}$ in paragraph (g)(7)(i) and (g)(7)(ii) of this section.

(B) If the aggregate batch vent stream was controlled on November 15, 1990, use Equation 51 and the procedures in paragraphs (h)(7)(ii)(A) through (h)(7)(ii)(B) of this section. $EABV2_{iu}$ shall be calculated according to the equations and procedures for $EABV_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

$$EABV2_{iBASE} = EABV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 51}]$$

(i) The following procedures shall be followed to establish nominal efficiencies for emission controls for storage vessels, continuous front-end process vents, and process wastewater streams. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percent reductions than the percent efficiencies assigned

to the reference control technologies in §63.111 of subpart G.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant-site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Director

of the EPA Office of Air Quality Planning and Standards, in writing.

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied, including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance.

(ii) Description of the control technology, including design specifications.

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA Method or any other method validated according to Method 301 of appendix A. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented.

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 operating days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 operating days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may grant permission to take emission credits for use of the control technology. The Ad-

ministrator may also impose requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraph (i)(1)(i) can be submitted to the permitting authority for the affected source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority as part of an operating permit application or modification. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the application, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines that the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percent reduction) of pollution prevention measures for storage vessels, continuous front-end process vents, batch front-end process vents, aggregate

batch vent streams, and wastewater streams:

(1) A pollution prevention measure is any practice which meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions, while the same product is produced.

(ii) Pollution prevention measures may include substitution of feedstocks that reduce organic HAP emissions; alterations to the production process to reduce the volume of materials released to the environment; equipment modifications; housekeeping measures; and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990, can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percent reduction is used in the equations in paragraphs (g)(2) through (g)(7) of this section and paragraphs (h)(2) through (h)(7) of this section is the percent difference between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) Equation 52 shall be used to calculate the percent reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = E_B - \frac{\left(\frac{E_{pp} \times P_B}{P_{pp}} \right)}{E_B} \times 100 \quad [\text{Eq. 52}]$$

where:

Percent reduction=Efficiency of pollution prevention measure (percent organic HAP reduction).

E_B =Monthly emissions before the pollution prevention measure, Mg/month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

E_{pp} =Monthly emissions after the pollution prevention measure, Mg/month, as determined for the most recent month, determined as specified in either paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

P_B =Monthly production before the pollution prevention measure, Mg/month, during the same period over which E_B is calculated.

P_{pp} =Monthly production after the pollution prevention measure, Mg/

month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure, E_B , shall be determined in a manner consistent with the equations and procedures in paragraph (g)(2) of this section for continuous front-end process vents, paragraph (g)(3) of this section for storage vessels, paragraph (g)(6) of this section for batch front-end process vents, and paragraph (g)(7) of this section for aggregate batch vent streams.

(B) For wastewater, E_B shall be calculated according to § 63.150(j)(2)(ii)(B) of subpart G.

(C) If the pollution prevention measure was implemented prior to September 5, 1996, records may be used to determine E_B .

(D) The monthly emissions after the pollution prevention measure, E_{pp} , may be determined during a performance

test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater, E_{pp} shall be calculated according to § 63.150(j)(2)(ii)(E) of subpart G.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percent reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percent reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(7) of this section, used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percent reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of an affected source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator must demonstrate that the emissions from the emission points proposed to be included in the emissions average will not result in greater hazard, or at the option of the Administrator, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§ 63.484, 63.485, 63.486, 63.493, and 63.501.

(l) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the Administrator.

(i) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their operating permit application or in their Emissions Averaging Plan if an operating permit application has not yet been submitted.

(3) An Emissions Averaging Plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the Emissions Averaging Plan as are necessary in order to ensure that the emissions average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.484, 63.485, 63.486, 63.493, and 63.501.

(4) A hazard or risk equivalency demonstration must:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the Administrator for such demonstrations.

(l) For periods of monitoring excursions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(2)(i) and (f)(2)(ii) of this section.

(1) The owner or operator shall notify the Administrator of monitoring excursions in the Periodic Reports as required in § 63.506(e)(6).

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures for demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the excursion and the other types of monitoring data or engineering calculations to be used to demonstrate that the control device

for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

(m) For each emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§ 63.484, 63.485, 63.486, 63.493, and 63.501, as applicable. If back-end process operations are included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for back-end process operations complying with § 63.493. The specific requirements for continuous front-end process vents, batch front-end process vents, aggregate batch vent streams, storage vessels, back-end process operations, and wastewater are identified in paragraphs (m)(1) through (m)(6) of this section.

(1) For each continuous front-end process vent equipped with a flare, incinerator, boiler, or process heater, as appropriate to the control technique:

(i) Determine whether the continuous front-end process vent is Group 1 or Group 2 according to the procedures specified in § 63.115 of subpart G and as required by § 63.485;

(ii) Conduct initial performance tests to determine percent reduction as specified in § 63.116 of subpart G and as required by § 63.485; and

(iii) Monitor the operating parameters, keep records, and submit reports as specified in § 63.114, § 63.117(a), and § 63.118(a), (f), and (g) of subpart G, as required, for the specific control device as required by § 63.485.

(2) For each continuous front-end process vent equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device, as appropriate to the control technique:

(i) Determine the flow rate, organic HAP concentration, and TRE index value according to the procedures specified in § 63.115 of subpart G; and

(ii) Monitor the operating parameters, keep records, and submit reports according to the procedures specified in § 63.114, § 63.117(a), and § 63.118 (b), (f),

and (g) of subpart G, as required, for the specific recovery device, and as required by § 63.485.

(3) For each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures according to the procedures specified in § 63.120 of subpart G, and as required by § 63.484;

(ii) Perform the reporting and recordkeeping procedures according to the procedures specified in §§ 63.122 and 63.123 of subpart G, and as required by § 63.484; and

(iii) For closed vent systems with control devices, conduct an initial design evaluation and submit an operating plan according to the procedures specified in § 63.120(d) and § 63.122(a)(2) and (b) of subpart G, and as required by § 63.484.

(4) For back-end process operations included in an emissions average:

(i) If stripping technology, and no control or recovery device, is used to reduce back-end process operation emissions, the owner or operator shall implement the following portions of this subpart:

(A) Paragraphs (b)(1), (b)(2), and (b)(3) of § 63.495, paragraph (b) of § 63.498, and the applicable provisions of § 63.499, or

(B) Paragraphs (c) (1), (2), and (3) of § 63.495, paragraph (c) of § 63.498, and the applicable provisions of § 63.499;

(ii) If a control or recovery device is used to reduce back-end process operation emissions, the owner or operator shall comply with §§ 63.496, 63.497, 63.498(d), and the applicable provisions of § 63.499, and shall implement the provisions of these sections.

(5) For wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests according to the procedures specified in § 63.138(i) and (j) of subpart G, and as required by § 63.501;

(ii) Conduct inspections and monitoring according to the procedures specified in § 63.143 of subpart G, and as required by § 63.501;

(iii) Implement a recordkeeping program according to the procedures specified in § 63.147 of subpart G, and as required by § 63.501; and

(iv) Implement a reporting program according to the procedures specified in § 63.146 of subpart G, and as required by § 63.501.

(6) For each batch front-end process vent and aggregate batch vent stream equipped with a control device, as appropriate to the control technique:

(i) Determine whether the batch front-end process vent or aggregate batch vent stream is Group 1 or Group 2 according to the procedures specified in § 63.488;

(ii) Conduct performance tests according to the procedures specified in § 63.490;

(iii) Conduct monitoring according to the procedures specified in § 63.489; and

(iv) Perform the recordkeeping and reporting procedures according to the procedures specified in §§ 63.491 and 63.492.

(7) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are required by §§ 63.484, 63.485, 63.486, 63.493, or § 63.501, the owner or operator shall submit the information specified in § 63.506(f) for alternate monitoring parameters or inspection procedures in the Emissions Averaging Plan or operating permit application.

(n) Records of all information required to calculate emission debits and credits shall be retained for 5 years.

(o) Precompliance Reports, Emission Averaging Plans, Notifications of Compliance Status, Periodic Reports, and other reports shall be submitted as required by § 63.506.

§ 63.504 Additional test methods and procedures.

(a) Performance testing shall be conducted in accordance with § 63.7 (a)(3), (d), (e), (g), and (h) of subpart A, with the exceptions specified in paragraphs (a)(1) through (a)(4) of this section and the additions specified in paragraph (b) of this section. Sections 63.484 through 63.501 also contain specific testing requirements.

(1) Performance tests shall be conducted according to the provisions of § 63.7(e) of subpart A, except that performance tests shall be conducted at maximum representative operating conditions for the process.

(2) References in § 63.7(g) of subpart A to the Notification of Compliance Status requirements in § 63.9(h) shall refer to the requirements in § 63.506(e)(5).

(3) Because the site-specific test plans in § 63.7(c)(3) of subpart A are not required, § 63.7(h)(4)(ii) is not applicable.

(4) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 calendar days before the performance test is scheduled, to allow the Administrator the opportunity to have an observer present during the test.

(b) Data shall be reduced in accordance with the EPA approved methods specified in the applicable subpart or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

§ 63.505 Parameter monitoring levels and excursions.

(a) *Establishment of parameter monitoring levels.* The owner or operator of a control or recovery device that has one or more parameter monitoring level requirements specified under this subpart shall establish a maximum or minimum level for each measured parameter using the procedures specified in paragraph (b), (c), or (d) of this section. The procedures specified in paragraph (b) have been approved by the Administrator. The procedures in paragraphs (c) and (d) of this section have not been approved by the Administrator, and determination of the parameter monitoring level using the procedures in paragraphs (c) or (d) of this section and is subject to review and approval by the Administrator. The determination and supporting documentation shall be included in the Precompliance Report.

(1) The owner or operator shall operate control and recovery devices such that monitored parameters remain above the minimum established level or below the maximum established level.

(2) As specified in § 63.506(e)(5) and § 63.506(e)(8), all established levels, along with their supporting documentation and the definition of an operating day, shall be approved as part of and incorporated into the Notification of Compliance Status or operating permit, respectively.

(3) Nothing in this section shall be construed to allow a monitoring parameter excursion caused by an activity that violates other applicable provisions of subparts A, F, or G of this part.

(b) *Establishment of parameter monitoring levels based on performance tests.* The procedures specified in paragraphs (b)(1) through (b)(3) of this section shall be used, as applicable, in establishing parameter monitoring levels. Level(s) established under this paragraph shall be based on the parameter values measured during the performance test.

(1) *Storage tanks and wastewater.* The maximum and/or minimum monitoring levels shall be based on the parameter values measured during the performance test, supplemented, if desired, by engineering assessments and/or manufacturer's recommendations.

(2) *Continuous front-end process vents and back-end process operations complying using control or recovery devices.* During initial compliance testing, the appropriate parameter shall be continuously monitored during the required 1-hour runs. The monitoring level(s) shall then be established as the average of the maximum (or minimum) point values from the three test runs. The average of the maximum values shall be used when establishing a maximum level, and the average of the minimum values shall be used when establishing a minimum level.

(3) *Batch front-end process vents.* The monitoring level(s) shall be established using the procedures specified in paragraphs (b)(3)(i) through (b)(3)(iii) of this section, as appropriate. The procedures specified in this paragraph may only be used if the batch emission episodes, or portions thereof, selected to be controlled were tested, and monitoring data were collected, during the entire period in which emissions were vented to the control device, as specified in § 63.490(c)(1)(i). If the owner or

operator chose to test only a portion of the batch emission episode, or portion thereof, selected to be controlled, as specified in § 63.490(c)(1)(i)(A), the procedures in paragraph (c) of this section must be used.

(i) If more than one batch emission episode or more than one portion of a batch emission episode has been selected to be controlled, a single level for the batch cycle shall be calculated as follows:

(A) During initial compliance testing, the appropriate parameter shall be monitored continuously at all times when batch emission episodes, or portions thereof, selected to be controlled are vented to the control device.

(B) The average monitored parameter value shall be calculated for each batch emission episode, or portion thereof, in the batch cycle selected to be controlled. The average shall be based on all values measured during the required performance test.

(C) If the level to be established is a maximum operating parameter, the level shall be defined as the minimum of the average parameter values of the batch emission episodes, or portions thereof, in the batch cycle selected to be controlled.

(D) If the level to be established is a minimum operating parameter, the level shall be defined as the maximum of the average parameter values of the batch emission episodes, or portions thereof, in the batch cycle selected to be controlled.

(E) Alternatively, an average monitored parameter value shall be calculated for the entire batch cycle based on all values measured during each batch emission episode, or portion thereof, selected to be controlled.

(ii) Instead of establishing a single level for the batch cycle, as described in paragraph (b)(3)(i) of this section, an owner or operator may establish separate levels for each batch emission episode, or portion thereof, selected to be controlled. Each level shall be determined as specified in paragraphs (b)(3)(i)(A) and (b)(3)(i)(B) of this section.

(iii) The batch cycle shall be defined in the Notification of Compliance Status, as specified in § 63.506(e)(5). The

definition shall include an identification of each batch emission episode and the information required to determine parameter monitoring compliance for partial batch cycles (i.e., when part of a batch cycle is accomplished during two different operating days).

(4) *Aggregate batch vent streams.* For aggregate batch vent streams, the monitoring level shall be established in accordance with paragraph (b)(2) of this section.

(c) *Establishment of parameter monitoring levels based on performance tests, engineering assessments, and/or manufacturer's recommendations.* As required in paragraph (a) of this section, the information specified in paragraphs (c)(2) and (c)(3) of this section shall be provided in the Precompliance Report.

(1) Parameter monitoring levels established under this paragraph shall be based on the parameter values measured during the performance test supplemented by engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of expected parameter values.

(2) The specific level of the monitored parameter(s) for each emission point.

(3) The rationale for the specific level for each parameter for each emission point, including any data and calculations used to develop the level and a description of why the level indicates proper operation of the control or recovery device.

(d) *Establishment of parameter monitoring based on engineering assessments and/or manufacturer's recommendations.* If a performance test is not required by this subpart for a control or recovery device, the maximum or minimum level may be based solely on engineering assessments and/or manufacturer's recommendations. As required in paragraph (a) of this section, the determined level and all supporting documentation shall be provided in the Precompliance Report.

(e) *Demonstration of compliance with back-end process provisions using stripper parameter monitoring.* If the owner or operator is demonstrating compliance with §63.495 using stripper parameter monitoring, stripper parameter levels shall be established for each grade in

accordance with paragraphs (e)(1) and (e)(2) of this section. A single set of stripper parameter levels can be representative of multiple grades.

(1) For each grade, the owner or operator shall calculate the residual organic HAP content using the procedures in paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) The location of the sampling shall be in accordance with §63.495(d).

(ii) The residual organic HAP content in each sample is to be determined using specified methods.

(2) For each grade, the owner or operator shall establish stripper operating parameter levels that represent stripper operation during the residual organic HAP content determination in paragraph (e)(1) of this section. The stripper operating parameters shall include, at a minimum, temperature, pressure, steaming rates (for steam strippers), and some parameter that is indicative of residence time.

(3) After the initial determinations, an owner or operator can add a grade, with corresponding stripper parameter levels, using the procedures in paragraphs (e)(1) and (e)(2) of this section. The results of this determination shall be submitted in the next periodic report.

(4) An owner or operator complying with the residual organic HAP limitations in paragraph (a) of §63.494 using stripping, and demonstrating compliance by stripper parameter monitoring, shall redetermine the residual organic HAP content for all affected grades whenever process changes are made. For the purposes of this section, a process change is any action that would reasonably be expected to impair the performance of the stripping operation. For the purposes of this section, examples of process changes may include changes in production capacity or production rate, or removal or addition of equipment. For purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; or changes that reduce the residual organic HAP content of the elastomer.

(f) *Compliance determinations.* The provisions of this paragraph apply only to

emission points and control or recovery devices for which continuous monitoring is required under this subpart.

(1) The parameter monitoring data for storage vessels, front-end process vents, back-end process operations complying through the use of control or recovery devices, process wastewater streams, and emission points included in emissions averages that are required to perform continuous monitoring shall be used to determine compliance for the monitored control or recovery devices.

(2) Except as provided in paragraph (f)(3) and (i) of this section, for each excursion, as defined in paragraphs (g) and (h) of this section, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

(3) If the daily average value of a monitored parameter is above the maximum level or below the minimum level established, or if monitoring data cannot be collected during monitoring device calibration check or monitoring device malfunction, but the affected source is operated during the periods of startup, shutdown, or malfunction in accordance with the affected source's Startup, Shutdown, and Malfunction Plan, then the event shall not be considered a monitoring parameter excursion.

(g) *Parameter monitoring excursion definitions.* (1) For storage vessels, continuous front-end process vents, aggregate batch vent streams, back-end process operations complying through the use of control or recovery devices, and wastewater streams, an excursion means any of the three cases listed in paragraphs (g)(1)(i) through (g)(1)(iii) of this section. For a control or recovery device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraphs (g)(1)(i) through (g)(1)(iii) of this section, this is considered a single excursion for the control or recovery device.

(i) When the daily average value of one or more monitored parameters is above the maximum level or below the minimum level established for the given parameters.

(ii) When the period of control or recovery device operation is 4 hours or

greater in an operating day and monitoring data are insufficient, as defined in paragraph (g)(1)(iv) of this section, to constitute a valid hour of data for at least 75 percent of the operating hours.

(iii) When the period of control or recovery device operation is less than 4 hours in an operating day and more than two of the hours during the period of operation do not constitute a valid hour of data due to insufficient monitoring data, as defined in paragraph (g)(1)(iv) of this section.

(iv) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (g)(1)(ii) and (g)(1)(iii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under § 63.506(g)(3), monitoring data are insufficient to calculate a valid hour of data if there are less than four data measurements made during the hour.

(2) For batch front-end process vents, an excursion means one of the two cases listed in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in either paragraph (g)(2)(i) or (g)(2)(ii) of this section, this is considered a single excursion for the control device.

(i) When the batch cycle daily average value of one or more monitored parameters is above the maximum or below the minimum established level for the given parameters.

(ii) When monitoring data are insufficient. Monitoring data shall be considered insufficient when measured values are not available for at least 75 percent of the 15-minute periods when batch emission episodes, or portions thereof, selected to be controlled are being vented to the control device during the operating day.

(h) *Excursion definitions for back-end operations complying through stripping.*

(1) For back-end process operations complying through the use of stripping technology, and demonstrating compliance by sampling, an excursion means one of the two cases listed in paragraphs (h)(1)(i) and (h)(1)(ii) of this section.

(i) When the monthly weighted average residual organic HAP content is

above the applicable residual organic HAP limitation in § 63.494; or

(ii) When less than 75 percent of the samples required in 1 month are taken and analyzed in accordance with the provisions of § 63.495(b).

(2) For back-end process operations complying through the use of stripping technology, and demonstrating compliance by stripper parameter monitoring, an excursion means one of the three cases listed in paragraphs (h)(2)(i), (h)(2)(ii), and (h)(2)(iii) of this section.

(i) When the monthly weighted average residual organic HAP content is above the applicable residual organic HAP limitation in § 63.494;

(ii) When an owner or operator fails to sample and analyze the organic HAP content of a sample for a grade with an hourly average stripper operating parameter value not in accordance with the established monitoring parameter levels for that parameter; or

(iii) When an owner or operator does not collect sufficient monitoring data for at least 75 percent of the grades or batches processed during a month. Stripper monitoring data are considered insufficient if monitoring parameters are obtained for less than 75 percent of the 15-minute periods during the processing of a grade, and a sample of that grade or batch is not taken and analyzed to determine the residual organic HAP content.

(i) *Excused excursions.* A number of excused excursions shall be allowed for each control or recovery device for each semiannual period. The number of excused excursions for each semiannual period is specified in paragraphs (i)(1) through (i)(6) of this section. This paragraph applies to affected sources required to submit Periodic Reports semiannually or quarterly. The first semiannual period is the 6-month period starting the date the Notification of Compliance Status is due.

(1) For the first semiannual period—six excused excursions.

(2) For the second semiannual period—five excused excursions.

(3) For the third semiannual period—four excused excursions.

(4) For the fourth semiannual period—three excused excursions.

(5) For the fifth semiannual period—two excused excursions.

(6) For the sixth and all subsequent semiannual periods—one excused excursion.

§ 63.506 General recordkeeping and reporting provisions.

(a) *Data retention.* Each owner or operator of an affected source shall keep copies of all applicable records and reports required by this subpart for at least 5 years, unless otherwise specified in this subpart.

(b) *Subpart A requirements.* The owner or operator of an affected source shall comply with the applicable recordkeeping and reporting requirements in 40 CFR part 63, subpart A as specified in Table 1 of this subpart. These requirements include, but are not limited to, the requirements specified in paragraphs (b)(1) and (b)(2) of this section.

(1) *Startup, shutdown, and malfunction plan.* The owner or operator of an affected source shall develop and implement a written startup, shutdown, and malfunction plan as specified in § 63.6(e)(3) of subpart A. This plan shall describe, in detail, procedures for operating and maintaining the affected source during periods of startup, shutdown, and malfunction and a program for corrective action for malfunctioning process and air pollution control equipment used to comply with this subpart. The affected source shall keep this plan onsite and shall incorporate it by reference into their operating permit. Records associated with the plan shall be kept as specified in paragraphs (b)(1)(i)(A) through (b)(1)(i)(D) of this section. Reports related to the plan shall be submitted as specified in paragraph (b)(1)(ii) of this section.

(i) *Records of startup, shutdown, and malfunction.* The owner or operator shall keep the records specified in paragraphs (b)(1)(i)(A) through (b)(1)(i)(D) of this section.

(A) Records of the occurrence and duration of each malfunction of air pollution control equipment or continuous monitoring systems used to comply with this subpart.

(B) For each startup, shutdown, or malfunction, a statement that the procedures specified in the affected source's startup, shutdown, and malfunction plan were followed; alternatively, documentation of any actions

taken that are not consistent with the plan.

(C) For continuous monitoring systems used to comply with this subpart, records documenting the completion of calibration checks and maintenance of continuous monitoring systems that are specified in the manufacturer's instructions.

(D) Records specified in paragraphs (b)(1)(i)(B) and (b)(1)(i)(C) of this section are not required if they pertain solely to Group 2 emission points that are not included in an emissions average.

(ii) *Reports of startup, shutdown, and malfunction.* For the purposes of this subpart, the semiannual startup, shutdown, and malfunction reports shall be submitted on the same schedule as the Periodic Reports required under paragraph (e)(6) of this section instead of the schedule specified in § 63.10(d)(5)(i) of subpart A. The reports shall include the information specified in paragraphs (b)(1)(i)(A) through (b)(1)(i)(C) of this section and shall contain the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy.

(2) *Application for approval of construction or reconstruction.* For new affected sources, each owner or operator shall comply with the provisions in § 63.5 of subpart A regarding construction and reconstruction, excluding the provisions specified in § 63.5(d)(1)(ii)(H), (d)(1)(iii), (d)(2), and (d)(3)(ii) of subpart A.

(c) *Subpart H requirements.* Owners or operators of affected sources shall comply with the reporting and recordkeeping requirements in subpart H, except as specified in § 63.502(g) through § 63.502(i).

(d) *Recordkeeping and documentation.* Owners or operators required to keep continuous records shall keep records as specified in paragraphs (d)(1) through (d)(8) of this section, unless an alternative recordkeeping system has been requested and approved as specified in paragraph (f), (g), or (h) of this section. Documentation requirements are specified in paragraphs (d)(9) and (d)(10) of this section.

(1) The monitoring system shall measure data values at least once every 15 minutes.

(2) The owner or operator shall record either:

- (i) Each measured data value; or
- (ii) Block average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values; or
- (iii) For batch front-end process vents, each batch cycle average or batch emission episode average, as appropriate, in addition to each measured data value recorded as required in paragraph (d)(2)(i) of this section.

(3) Daily average (or batch cycle daily average) values of each continuously monitored parameter shall be calculated for each operating day as specified in paragraphs (d)(3)(i) through (d)(3)(ii) of this section, except as specified in paragraph (d)(6) of this section.

(i) The daily average value or batch cycle daily average shall be calculated as the average of all parameter values recorded during the operating day. As specified in § 63.491(e)(2)(i), only parameter values measured during those batch emission episodes, or portions thereof, in the batch cycle that the owner or operator has chosen to control shall be used to calculate the average. The calculated average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) The operating day shall be the period that the owner or operator specifies in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another 24-hour period.

(4) *Records required when out of compliance.* If the daily average (or batch cycle daily average) value of a monitored parameter for a given operating day is below the minimum level or above the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator shall retain the data recorded that operating day under paragraph (d)(2) of this section.

(5) *Records required when in compliance for daily average value or batch cycle*

daily average value. If the daily average (or batch cycle daily average) value of a monitored parameter for a given operating day is above the minimum level or below the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator shall either:

(i) Retain block average values for 1 hour or shorter periods for that operating day; or

(ii) Retain the data recorded in paragraphs (d)(2)(i) and (d)(2)(iii) of this section.

(6) *Records required when all recorded values are in compliance.* If all recorded values for a monitored parameter during an operating day are above the minimum level or below the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were above the minimum level or below the maximum level rather than calculating and recording a daily average (or batch cycle daily average) for that operating day. For these operating days, the records required in paragraph (d)(5) of this section are required.

(7) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods.

(8) In addition to the periods specified in paragraph (d)(7) of this section, records shall be kept of the times and durations of any other periods during process operation or control device operation when monitors are not operating. For batch front-end process vents, this paragraph only applies during batch emission episodes, or portions thereof, that the owner or operator has selected for control.

(9) For each EPPU that is not part of the affected source because it does not use any organic HAP, the owner or operator shall maintain the documentation specified in § 63.480(b)(1).

(10) For each flexible operation unit in which the primary product is determined to be something other than an elastomer product, the owner or opera-

tor shall maintain the documentation specified in § 63.480(f)(6).

(e) *Reporting and notification.* (1) In addition to the reports and notifications required by subparts A and H, as specified in this subpart, the owner or operator of an affected source shall prepare and submit the reports listed in paragraphs (e)(3) through (e)(8) of this section, as applicable.

(2) All reports required under this subpart shall be sent to the Administrator at the addresses listed in § 63.13 of subpart A of this part. If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(3) *Precompliance Report.* Affected sources requesting an extension for compliance, or requesting approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping, or alternative controls, shall submit a Precompliance Report according to the schedule described in paragraph (e)(3)(i) of this section. The Precompliance Report shall contain the information specified in paragraphs (e)(3)(ii) through (e)(3)(vi) of this section, as appropriate.

(i) *Submittal dates.* The Precompliance Report shall be submitted to the Administrator no later than 12 months prior to the compliance date. For new sources, the Precompliance Report shall be submitted to the Administrator with the application for approval of construction or reconstruction required in paragraph (b)(2) of this section.

(ii) A request for an extension for compliance must be submitted in the Precompliance Report, if it has not been submitted to the operating permit authority as part of the operating permit application. The request for a compliance extension will include the data outlined in § 63.6(i)(6)(i)(A), (B), and (D) of subpart A, as required in § 63.481(e)(1).

(iii) The alternative monitoring parameter information required in paragraph (f) of this section shall be submitted if, for any emission point, the owner or operator of an affected source seeks to comply through the use of a control technique other than those for which monitoring parameters are specified in this subpart or in subpart G of

this part, or seeks to comply by monitoring a different parameter than those specified in this subpart or in subpart G of this part.

(iv) If the affected source seeks to comply using alternative continuous monitoring and recordkeeping as specified in paragraph (g) of this section, the information requested in paragraph (e)(3)(iv)(A) or (e)(3)(iv)(B) of this section must be submitted in the Precompliance Report.

(A) The owner or operator must submit notification of the intent to use the provisions specified in paragraph (h) of this section; or

(B) The owner or operator must submit a request for approval to use alternative continuous monitoring and recordkeeping provisions as specified in paragraph (g) of this section.

(v) The owner or operator shall report the intent to use alternative controls to comply with the provisions of this subpart. Alternative controls must be deemed by the Administrator to be equivalent to the controls required by the standard, under the procedures outlined in § 63.6(g) of subpart A.

(4) *Emissions Averaging Plan.* For all existing affected sources using emissions averaging, an Emissions Averaging Plan shall be submitted for approval according to the schedule and procedures described in paragraph (e)(4)(i) of this section. The Emissions Averaging Plan shall contain the information specified in paragraph (e)(4)(ii) of this section, unless the information required in paragraph (e)(4)(ii) of this section is submitted with an operating permit application. An owner or operator of an affected source who submits an operating permit application instead of an Emissions Averaging Plan shall submit the information specified in paragraph (e)(8) of this section. In addition, a supplement to the Emissions Averaging Plan, as required under paragraph (e)(4)(iii) of this section, is to be submitted whenever alternative controls or operating scenarios may be used to comply with this subpart. Updates to the Emissions Averaging Plan shall be submitted in accordance with paragraph (e)(4)(iv) of this section.

(i) *Submittal and approval.* The Emissions Averaging Plan shall be submit-

ted no later than 18 months prior to the compliance date, and is subject to Administrator approval. The Administrator shall determine within 120 operating days whether the Emissions Averaging Plan submitted presents sufficient information. The Administrator shall either approve the Emissions Averaging Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 operating days.

(ii) *Information required.* The Emissions Averaging Plan shall contain the information listed in paragraphs (e)(4)(ii)(A) through (e)(4)(ii)(M) of this section for all emission points included in an emissions average.

(A) The required information shall include the identification of all emission points and process back-end operations in the planned emissions average and, where applicable, notation of whether each storage vessel, continuous front-end process vent, batch front-end process vent, aggregate batch vents stream, and process wastewater stream is a Group 1 or Group 2 emission point, as defined in § 63.482 or as designated under § 63.503(c)(2).

(B) The required information shall include the projected emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.503. The projected credits must be greater than or equal to the projected debits, as required under § 63.503(e)(3).

(C) The required information shall include the specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(D) The required information shall include the specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in § 63.503(j)(1) must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(E) The required information shall include a statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in § 63.503(m), (n), and (o) that are applicable to each emission point in the emissions average will be implemented beginning on or before the date of compliance.

(F) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(F)(1) through (e)(4)(ii)(F)(5) of this section for each storage vessel and continuous front-end process vent included in the average.

(1) The required documentation shall include the values of the parameters used to determine whether the emission point is Group 1 or Group 2. Where a TRE index value is used for continuous front-end process vent determination, the estimated or measured values of the parameters used in the TRE equation in § 63.115(d) of subpart G and the resulting TRE index value shall be submitted.

(2) The required documentation shall include the estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.503 (g) and (h). These parameter values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported in an update to the Emissions Averaging Plan, as required by paragraph (e)(4)(iv)(B)(2) of this section.

(3) The required documentation shall include the estimated percent reduction if a control technology achieving a lower percent reduction than the efficiency of the applicable reference control technology or standard is or will be applied to the emission point.

(4) The required documentation shall include the anticipated nominal efficiency if a control technology achieving a greater percent emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in § 63.503(i) shall be followed to apply for a nominal efficiency.

(5) The required documentation shall include the information specified in § 63.120(d)(2)(i) and in either

§ 63.120(d)(2)(ii) or (d)(2)(iii) of subpart G for each storage vessel controlled with a closed-vent system using a control device other than a flare.

(G) The information specified in paragraph (f) of this section shall be included in the Emissions Averaging Plan for:

(1) Each continuous front-end process vent controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in § 63.114 of subpart G, and

(2) Each storage vessel controlled by pollution prevention or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(H) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(H)(1) through (e)(4)(ii)(H)(4) of this section for each process wastewater stream included in the average.

(1) The required documentation shall include the data used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream and the information specified in table 14b of subpart G of this part for wastewater streams at new and existing sources.

(2) The required documentation shall include the estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in § 63.503(g)(5) and (h)(5). These parameter values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv)(B)(2) of this section.

(3) The required documentation shall include the estimated percent reduction if:

(i) A control technology that achieves an emission reduction less than or equal to the emission reduction that would otherwise have been achieved by a steam stripper designed to the specifications found in § 63.138(g) of subpart G is or will be applied to the wastewater stream, or external floating roof or a closed vent system with a control device.

(ii) A control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes, or

(iii) A pollution prevention measure is or will be applied.

(4) The required documentation shall include the anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under § 63.503(i). A nominal efficiency shall be applied for if:

(i) A control technology that achieves an emission reduction greater than the emission reduction that would have been achieved by a steam stripper designed to the specifications found in § 63.138(g) of subpart G, is or will be applied to the wastewater stream; or

(ii) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(I) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP from wastewater and for which no monitoring parameters or inspection procedures are specified in § 63.143 of subpart G, the information specified in paragraph (f) of this section (Alternative Monitoring Parameters) shall be included in the Emissions Averaging Plan.

(J) The required information shall include documentation of the data required by estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.503 (g) and (h) for each process back-end operation included in an emissions average. These values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv)(B)(2) of this section.

(K) The required information shall include documentation of the information required by § 63.503(k). The documentation must demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the Administrator, great-

er risk to human health or the environment than if the emission points were not included in an emissions average.

(L) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(L)(1) through (e)(4)(ii)(L)(3) of this section for each batch front-end process vent and aggregate batch vent stream included in the average.

(1) The required documentation shall include the values of the parameters used to determine whether the emission point is Group 1 or Group 2.

(2) The required information shall include the estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.503(g) and (h). These parameter values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv) of this section.

(3) For batch front-end process vents, the required documentation shall include the estimated percent reduction for the batch cycle. For aggregate batch vent streams, the required documentation shall include the estimated percent reduction achieved on a continuous basis.

(M) For each pollution prevention measure or control device used to reduce air emissions of organic HAP from batch front-end process vents or batch vent streams and for which no monitoring parameters or inspection procedures are specified in § 63.489, the information specified in paragraph (f) of this section, Alternative Monitoring Parameters, shall be included in the Emissions Averaging Plan.

(iii) *Supplement to Emissions Averaging Plan.* The owner or operator required to prepare an Emissions Averaging Plan under paragraph (e)(4) of this section shall also prepare a supplement to the Emissions Averaging Plan for any alternative controls or operating scenarios that may be used to achieve compliance.

(iv) *Updates to Emissions Averaging Plan.* The owner or operator of an affected source required to submit an Emissions Averaging Plan under paragraph (e)(4) of this section shall also

submit written updates of the Emissions Averaging Plan to the Administrator for approval under the circumstances described in paragraphs (e)(4)(iv)(A) and (e)(4)(iv)(B) of this section unless the relevant information has been included and submitted in an operating permit application or amendment.

(A) The owner or operator who plans to make a change listed in either paragraph (e)(4)(iv)(A)(1) or (e)(4)(iv)(A)(2) of this section shall submit an Emissions Averaging Plan update at least 120 operating days prior to making the change.

(1) An Emissions Averaging Plan update shall be submitted whenever an owner or operator elects to achieve compliance with the emissions averaging provisions in § 63.503 by using a control technique other than that specified in the Emissions Averaging Plan, or plans to monitor a different parameter or operate a control device in a manner other than that specified in the Emissions Averaging Plan.

(2) An Emissions Averaging Plan update shall be submitted whenever an emission point or an EPPU is added to an existing affected source and is planned to be included in an emissions average, or whenever an emission point not included in the emissions average described in the Emissions Averaging Plan is to be added to an emissions average. The information in paragraph (e)(4) of this section shall be updated to include the additional emission point.

(B) The owner or operator who has made a change as defined in paragraph (e)(4)(iv)(B)(1) or (e)(4)(iv)(B)(2) of this section shall submit an Emissions Averaging Plan update within 90 operating days after the information regarding the change is known to the affected source. The update may be submitted in the next quarterly periodic report if the change is made after the date the Notification of Compliance Status is due.

(1) An Emissions Averaging Plan update shall be submitted whenever a process change is made such that the group status of any emission point in an emissions average changes.

(2) An Emissions Averaging Plan update shall be submitted whenever a value of a parameter in the emission

credit or debit equations in § 63.503(g) or (h) changes such that it is below the minimum or above the maximum established level specified in the Emissions Averaging Plan and causes a decrease in the projected credits or an increase in the projected debits.

(C) The Administrator shall approve or request changes to the Emissions Averaging Plan update within 120 operating days of receipt of sufficient information regarding the change for emission points included in emissions averages.

(5) *Notification of Compliance Status.* For existing and new affected sources, a Notification of Compliance Status shall be submitted within 150 operating days after the compliance dates specified in § 63.481. The notification shall contain the information listed in paragraphs (e)(5)(i) through (e)(5)(vii) of this section.

(i) The results of any emission point group determinations, process section applicability determinations, performance tests, inspections, continuous monitoring system performance evaluations, any other information used to demonstrate compliance, values of monitored parameters established during performance tests, and any other information required to be included in the Notification of Compliance Status under § 63.122 of subpart G for storage vessels, § 63.117 of subpart G for continuous front-end process vents, § 63.492 for batch front-end process vents, § 63.499 for back-end process operations, § 63.146 of subpart G for process wastewater, and § 63.503 for emission points included in an emissions average. In addition, each owner or operator shall comply with paragraphs (e)(5)(i)(A) and (e)(5)(i)(B) of this section.

(A) For performance tests, and group determinations, and process section applicability determinations that are based on measurements, the Notification of Compliance Status shall include one complete test report, as described in paragraph (e)(5)(i)(B) of this section, for each test method used for a particular kind of emission point. For additional tests performed for the same kind of emission point using the same method, the results and any other required information shall be submitted,

but a complete test report is not required.

(B) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(ii) For each monitored parameter for which a maximum or minimum level is required to be established under § 63.120(d)(3) of subpart G for storage vessels, § 63.485(k) for continuous front-end process vents, § 63.489 for batch front-end process vents and aggregate batch vent streams, § 63.497 for back-end process operations, § 63.143(f) of subpart G for process wastewater, § 63.503(m) for emission points in emissions averages, paragraph (e)(8) of this section, or paragraph (f) of this section, the information specified in paragraphs (e)(5)(ii)(A) through (e)(5)(ii)(E) of this section, unless this information has been established and provided in the operating permit.

(A) The required information shall include the specific maximum or minimum level of the monitored parameter(s) for each emission point.

(B) The required information shall include the rationale for the specific maximum or minimum level for each parameter for each emission point, including any data and calculations used to develop the level and a description of why the level indicates proper operation of the control device.

(C) The required information shall include a definition of the affected source's operating day, as specified in paragraph (d)(3)(ii) of this section, for purposes of determining daily average values of monitored parameters.

(D) For batch front-end process vents, the required information shall include a definition of each batch cycle that requires the control of one or more batch emission episodes during the cycle, as specified in § 63.490(c)(2) and 63.505(b)(3)(ii).

(E) The required information shall include a definition of the affected source's operating month for the purposes of determining monthly average values of residual organic HAP.

(iii) For emission points included in an emissions average, the values of all parameters needed for input to the emission credit and debit equations in § 63.503 (g) and (h), calculated or measured according to the procedures in § 63.503 (g) and (h), and the resulting calculation of credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified.

(iv) For batch front-end process vents required to establish a batch cycle limitation under § 63.490(f), the owner or operator must define the 12-month period over which that source's "year" will be said to occur, as required by the definition of "year" in § 63.482.

(v) The determination of applicability for flexible operation units as specified in § 63.480(f)(6).

(vi) The parameter monitoring levels for flexible operation units, and the basis on which these levels were selected, or a demonstration that these levels are appropriate at all times, as specified in § 63.480(f)(7).

(vii) The results for each predominant use determination for storage vessels belonging to an affected source subject to this subpart that is made under § 63.480(g)(6).

(viii) The results for each predominant use determination for recovery operation equipment belonging to an affected source subject to this subpart that is made under § 63.480(h)(6).

(ix) For owners and operators of Group 2 batch front-end process vents establishing a batch cycle limitation, as specified in § 63.490(f), the affected source's operating year for purposes of determining compliance with the batch cycle limitation.

(6) *Periodic Reports.* For existing and new affected sources, each owner or operator shall submit Periodic Reports as specified in paragraphs (e)(6)(i) through (e)(6)(xi) of this section.

(i) Except as specified in paragraphs (e)(6)(x) and (e)(6)(xi) of this section, a report containing the information in paragraph (e)(6)(ii) of this section or paragraphs (e)(6)(iii) through (e)(6)(ix)

of this section, as appropriate, shall be submitted semiannually no later than 60 operating days after the end of each 180 day period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due. Subsequent reports shall cover each preceding 6-month period.

(ii) If none of the compliance exceptions in paragraphs (e)(6)(iii) through (e)(6)(ix) of this section occurred during the 6-month period, the Periodic Report required by paragraph (e)(6)(i) of this section shall be a statement that the affected source was in compliance for the preceding 6-month period and that none of the activities specified in paragraphs (e)(6)(iii) through (e)(6)(ix) of this section occurred.

(iii) For an owner or operator of an affected source complying with the provisions of §§ 63.484 through 63.501 for any emission point, Periodic Reports shall include:

(A) All information specified in § 63.122(a)(4) of subpart G for storage vessels, §§ 63.117(a)(3) and 63.118(f) of subpart G for continuous front-end process vents, § 63.492 for batch front-end process vents and aggregate batch vent streams, § 63.499 for back-end process operations, § 63.104(b)(4) of subpart F for heat exchange systems, and § 63.146(c) through § 63.146(f) of subpart G for process wastewater.

(B) The daily average values or batch cycle daily average values of monitored parameters for all excursions, as defined in § 63.505(g) and § 63.505(h).

(C) The periods when monitoring data were not collected shall be specified; and

(D) The information in paragraphs (e)(6)(iii)(D)(1) through (e)(6)(iii)(D)(3) of this section, as applicable:

(1) Any supplements to the Emissions Averaging Plan, as required in paragraph (e)(4)(iii) of this section;

(2) Notification if a process change is made such that the group status of any emission point changes. The information submitted shall include a compliance schedule, as specified in paragraphs (e)(6)(iii)(D)(2)(i) and (e)(6)(iii)(D)(2)(ii) of this section, for emission points that change from

Group 2 to Group 1, or for continuous front-end process vents under the conditions listed in § 63.485(l)(1) through § 63.485(l)(4), or for batch front-end process vents under the conditions listed in § 63.492 (b) or (c).

(i) The owner or operator shall submit to the Administrator for approval a compliance schedule and a justification for the schedule.

(ii) The Administrator shall approve the compliance schedule or request changes within 120 operating days of receipt of the compliance schedule and justification.

(3) Notification if one or more emission points or one or more EPPU is added to an affected source. The owner or operator shall submit the information contained in paragraphs (e)(6)(iii)(D)(3)(i) through (e)(6)(iii)(D)(3)(iii) of this section.

(i) A description of the addition to the affected source;

(ii) Notification of the group status of the additional emission point or all emission points in the EPPU;

(iii) A compliance schedule, as required under paragraph (e)(6)(iii)(D)(2) of this section.

(4) Notification if a standard operating procedure, as defined in § 63.500(l), is changed. This shall also include test results of the carbon disulfide concentration resulting from the new standard operating procedure.

(E) The information in paragraph (b)(1)(ii) of this section for reports of startup, shutdown, and malfunction.

(iv) For each batch front-end process vent with a batch cycle limitation, the owner or operator shall include the number of batch cycles accomplished during the preceding 12-month period once per year in a Periodic Report.

(v) If any performance tests are reported in a Periodic Report, the following information shall be included:

(A) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (e)(5)(i)(B) of this section.

(B) For additional tests performed for the same kind of emission point using the same method, results and any other information required shall be

submitted, but a complete test report is not required.

(vi) The results for each change made to a primary product determination for an elastomer product made under § 63.480(f)(6).

(vii) The results for each change made to a predominant use determination for a storage vessel belonging to an affected source subject to this subpart that is made under § 63.480(g)(6).

(viii) The results for each change made to a predominant use determination for recovery operation equipment belonging to an affected source subject to this subpart that is made under § 63.480(h)(6).

(ix) The Periodic Report required by § 63.502(i) shall be submitted as part of the Periodic Report required by paragraph (e)(6) of this section.

(x) The owner or operator of an affected source shall submit quarterly reports for all emission points included in an emissions average.

(A) The quarterly reports shall be submitted no later than 60 operating days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status no later than 150 days after the compliance date.

(B) The quarterly reports shall include the information specified in paragraphs (e)(6)(x)(B)(1) through (e)(6)(x)(B)(7) of this section for all emission points included in an emissions average.

(1) The credits and debits calculated each month during the quarter;

(2) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under § 63.503(e)(4);

(3) The values of any inputs to the debit and credit equations in § 63.503(g) and (h) that change from month to month during the quarter or that have changed since the previous quarter;

(4) Results of any performance tests conducted during the reporting period including one complete report for each test method used for a particular kind of emission point as described in paragraph (e)(6)(v) of this section;

(5) Reports of daily average values or batch cycle daily averages of mon-

itored parameters for excursions as defined in § 63.505(g) or (h);

(6) For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified; and

(7) Any other information the affected source is required to report under the operating permit or Emissions Averaging Plan for the affected source.

(C) Section 63.505 shall govern the use of monitoring data to determine compliance for Group 1 and Group 2 emission points included in emissions averages.

(D) Every fourth quarterly report shall include the following:

(1) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.503(e)(3); and

(2) A certification of compliance with all the emissions averaging provisions in § 63.503.

(xi) The owner or operator of an affected source shall submit quarterly reports for particular emission points and process sections not included in an emissions average as specified in paragraphs (e)(6)(xi)(A) through (e)(6)(xi)(E) of this section.

(A) If requested by the Administrator, the owner or operator of an affected source shall submit quarterly reports for a period of 1 year for an emission point or process section that is not included in an emissions average if either the conditions in paragraph (e)(6)(xi)(A)(1) or (e)(6)(xi)(A)(2) of this section are met.

(1) An emission point has any excursions, as defined in § 63.505(g) or § 63.505(h) for a semiannual reporting period.

(2) The process section is out of compliance with its applicable standard.

(B) The quarterly reports shall include all information specified in paragraphs (e)(6)(iii) and (e)(6)(ix) of this section, as applicable to the emission point or process section for which quarterly reporting is required under paragraph (e)(6)(ix)(A) of this section. Information applicable to other emission points within the affected source shall be submitted in the semiannual reports required under paragraph (e)(6)(i) of this section.

(C) Quarterly reports shall be submitted no later than 60 operating days after the end of each quarter.

(D) After quarterly reports have been submitted for an emission point for 1 year, the owner or operator may return to semiannual reporting for the emission point or process section unless the Administrator requests the owner or operator to continue to submit quarterly reports.

(E) § 63.505 shall govern the use of monitoring data to determine compliance for Group 1 emission points.

(7) *Other reports.* Other reports shall be submitted as specified in paragraphs (e)(7)(i) and (e)(7)(ii) of this section.

(i) For storage vessels, the notifications of inspections required by § 63.484 shall be submitted, as specified in § 63.122(h)(1) and (h)(2) of subpart G.

(ii) For owners or operators of affected sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.503(i) shall be submitted.

(iii) For back-end process operations complying using control or recovery devices, the recompliance determination report required by § 63.499(d) shall be submitted within 180 days after the process change.

(8) *Operating Permit.* An owner or operator who submits an operating permit application instead of an Emissions Averaging Plan or a Precompliance Report shall submit the following information with the operating permit application:

(i) The information specified in paragraph (e)(4) of this section for points included in an emissions average; and

(ii) The information specified in paragraph (e)(3) of this section, Precompliance Report, as applicable.

(f) *Alternative monitoring parameters.* The owner or operator who has been directed by any section of this subpart to set unique monitoring parameters, or who requests approval to monitor a different parameter than those listed in § 63.484 for storage vessels, § 63.114 of subpart G for continuous front-end process vents, § 63.489 for batch front-end process vents and aggregate batch vent streams, § 63.497 for back-end process operations, or § 63.143 of subpart G

for process wastewater shall submit the information specified in paragraphs (f)(1) through (f)(3) of this section in the Precompliance Report, as required by paragraph (e)(3) of this section. The owner or operator shall retain for a period of 5 years each record required by paragraphs (f)(1) through (f)(3) of this section.

(1) The required information shall include a description of the parameter(s) to be monitored to ensure the recovery device, control device, or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).

(2) The required information shall include a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation, the schedule for this demonstration, and a statement that the owner or operator will establish a level for the monitored parameter as part of the Notification of Compliance Status report required in paragraph (e)(5) of this section, unless this information has already been included in the operating permit application.

(3) The required information shall include a description of the proposed monitoring, recordkeeping, and recording system, to include the frequency and content of monitoring, recordkeeping, and reporting. Further, the rationale for the proposed monitoring, recordkeeping, and reporting system shall be included if either condition in paragraph (f)(3)(i) or (f)(3)(ii) of this section are met:

(i) If monitoring and recordkeeping is not continuous, or

(ii) If reports of daily average values will not be included in Periodic Reports when the monitored parameter value is above the maximum level or below the minimum level as established in the operating permit or the Notification of Compliance Status.

(g) *Alternative continuous monitoring and recordkeeping.* An owner or operator choosing not to implement the continuous parameter operating and recordkeeping provisions listed in § 63.485 for continuous front-end process vents, § 63.486 for batch front-end process

vents and aggregate batch vent streams, §63.493 for back-end process operations, and §63.501 for wastewater, may instead request approval to use alternative continuous monitoring and recordkeeping provisions according to the procedures specified in paragraphs (g)(1) through (g)(4) of this section. Requests shall be submitted in the Precompliance Report as specified in paragraph (e)(3)(iv) of this section, if not already included in the operating permit application, and shall contain the information specified in paragraphs (g)(2)(ii) and (g)(3)(ii) of this section, as applicable.

(1) The provisions in §63.8(f)(5)(i) of subpart A shall govern the review and approval of requests.

(2) An owner or operator of an affected source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and that does not generate continuous records may request approval to use a nonautomated system with less frequent monitoring, in accordance with paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(i) The requested system shall include manual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily average or batch cycle daily average values shall be calculated from these hourly values and recorded.

(ii) The request shall contain:

(A) A description of the planned monitoring and recordkeeping system;

(B) Documentation that the affected source does not have an automated monitoring and recording system;

(C) Justification for requesting an alternative monitoring and recordkeeping system; and

(D) Demonstration to the Administrator's satisfaction that the proposed monitoring frequency is sufficient to represent control device operating conditions, considering typical variability of the specific process and control device operating parameter being monitored.

(3) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating

parameter values at a set frequency (for example, once every 15 minutes), but that records all values that meet set criteria for variation from previously recorded values, in accordance with paragraphs (g)(3)(i) and (g)(3)(ii) of this section.

(i) The requested system shall be designed to:

(A) Measure the operating parameter value at least once every 15 minutes;

(B) Except for the monitoring of batch front-end process vents, record at least four values each hour during periods of operation;

(C) Record the date and time when monitors are turned off or on;

(D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident;

(E) Calculate daily average or batch cycle daily average values of the monitored operating parameter based on all measured data; and

(F) If the daily average is not an excursion, as defined in §63.505 (g) or (h), the data for that operating day may be converted to hourly average values and the four or more individual records for each hour in the operating day may be discarded.

(ii) The request shall contain:

(A) A description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained;

(B) The method for calculating daily averages and batch cycle daily averages; and

(C) A demonstration that the system meets all criteria in paragraph (g)(3)(i) of this section.

(4) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in §63.8(f)(4) of subpart A.

(h) *Reduced recordkeeping program.* For any parameter with respect to any item of equipment, the owner or operator may implement the recordkeeping requirements in paragraph (h)(1) or (h)(2) of this section as alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §63.484 for storage vessels, §63.485 for continuous front-end

process vents, § 63.486 for batch front-end process vents and aggregate batch vent streams, § 63.493 for back-end processes, and § 63.501 for wastewater. The owner or operator shall retain for a period of 5 years each record required by paragraph (h)(1) or (h)(2) of this section.

(1) The owner or operator may retain only the daily average or the batch cycle daily average value, and is not required to retain more frequent monitored operating parameter values, for a monitored parameter with respect to an item of equipment, if the requirements of paragraphs (h)(1)(i) through (h)(1)(iv) of this section are met. An owner or operator electing to comply with the requirements of paragraph (h)(1) of this section shall notify the Administrator in the Notification of Compliance Status or, if the Notification of Compliance Status has already been submitted, in the Periodic Report immediately preceding implementation of the requirements of paragraph (h)(1) of this section.

(i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation other than startups, shutdowns or malfunctions (e.g., a temperature reading of -200°C on a boiler), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this running average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (h)(1)(ii)(A) through (h)(1)(ii)(C) of this section. All instances in an operating day constitute a single occurrence.

(A) The running average is above the maximum or below the minimum established limits;

(B) The running average is based on at least six one-hour periods; and

(C) The running average reflects a period of operation other than a startup, shutdown, or malfunction.

(iii) The monitoring system is capable of detecting unchanging data during periods of operation other than startups, shutdowns or malfunctions, except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(iv) The monitoring system will alert the owner or operator by an alarm, if the running average parameter value calculated under paragraph (h)(1)(ii) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.

(v) The owner or operator shall verify the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (h)(1) of this section, at the times specified in paragraphs (h)(1)(v)(A) through (h)(1)(v)(C) of this section. The owner or operator shall document that the required verifications occurred.

(A) Upon initial installation.

(B) Annually after initial installation.

(C) After any change to the programming or equipment constituting the monitoring system, which might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.

(vi) The owner or operator shall retain the records identified in paragraphs (h)(1)(vi)(A) through (h)(1)(vi)(C) of this section.

(A) Identification of each parameter, for each item of equipment, for which the owner or operator has elected to comply with the requirements of paragraph (h) of this section.

(B) A description of the applicable monitoring system(s), and how compliance will be achieved with each requirement of paragraphs (h)(1)(i) through (h)(1)(v) of this section. The description shall identify the location

and format (e.g., on-line storage, log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent superseded description.

(C) A description, and the date, of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (h)(1) of this section.

(2) If an owner or operator has elected to implement the requirements of paragraph (h)(1) of this section for a monitored parameter with respect to an item of equipment and a period of 6 consecutive months has passed without an excursion as defined in paragraph (h)(2)(iv) of this section, the owner or operator is no longer required to record the daily average or batch cycle daily average value, for any operating day when the daily average or batch cycle daily average value is less than the maximum, or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months, if the parameter limit and the monitoring accomplished during the period prior to the compliance date was required and/or approved by the Administrator.

(i) If the owner or operator elects not to retain the daily average or batch cycle daily average values, the owner or operator shall notify the Administrator in the next Periodic Report. The notification shall identify the parameter and unit of equipment.

(ii) If, on any operating day after the owner or operator has ceased recording daily average or batch cycle daily average values as provided in paragraph (h)(2) of this section, there is an excursion as defined in paragraph (h)(2)(iv)

of this section, the owner or operator shall immediately resume retaining the daily average or batch cycle daily average value for each operating day and shall notify the Administrator in the next Periodic Report. The owner or operator shall continue to retain each daily average or batch cycle daily average value until another period of 6 consecutive months has passed without an excursion as defined in paragraph (h)(2)(iv) of this section.

(iii) The owner or operator shall retain the records specified in paragraphs (h)(1)(i), (h)(1)(ii), and (h)(1)(iv) of this section, for the duration specified in paragraph (h) of this section. For any calendar month, if compliance with paragraphs (h)(1)(i) through (h)(1)(iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation other than a startup, shutdown, or malfunction.

(iv) For the purposes of paragraph (h) of this section, an excursion means that the daily average or batch cycle daily average value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value, except as provided in paragraphs (h)(2)(iv)(A) and (h)(2)(iv)(B) of this section.

(A) The daily average or batch cycle daily average value during any startup, shutdown, or malfunction shall not be considered an excursion for purposes of paragraph (h)(2) of this section, if the owner or operator follows the applicable provisions of the startup, shutdown, and malfunction plan required by §63.6(e)(3) of subpart A.

(B) An excused excursion, as described in §63.505(i), shall not be considered an excursion for the purposes of paragraph (h)(2) of this section.

TABLE 1.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART U AFFECTED SOURCES

Reference	Applies to subpart U	Comment
63.1(a)(1)	Yes	§ 63.482 of Subpart U specifies definitions in addition to or that supersede definitions in § 63.2.
63.1(a)(2)–63.1(a)(3) ..	Yes	Subpart U (this table) specifies the applicability of each paragraph in subpart A to subpart U.
63.1(a)(4)	Yes	
63.1(a)(5)	No	Reserved.
63.1(a)(6)–63.1(a)(8) ..	Yes	Reserved.
63.1(a)(9)	No	

Environmental Protection Agency

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TABLE 1.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART U AFFECTED SOURCES—Continued

Reference	Applies to subpart U	Comment
63.1(a)(10)	No	Subpart U and other cross-referenced subparts specify calendar or operating day.
63.1(a)(11)	Yes	
63.1(a)(12)–63.1(a)(14)	Yes	§ 63.480(a) contains specific applicability criteria.
63.1(b)(1)	Yes	
63.1(b)(2)	Yes	§ 63.480(b) of subpart U provides documentation requirements for EPPUs not considered affected sources.
63.1(b)(3)	No	
63.1(c)(1)	Yes	Subpart U (this table) specifies the applicability of each paragraph in subpart A to subpart U.
63.1(c)(2)	No	Area sources are not subject to subpart U.
63.1(c)(3)	No	Reserved.
63.1(c)(4)	Yes	Except that affected sources are not required to submit notifications overridden by this table.
63.1(c)(5)	Yes	
63.1(d)	No	Reserved.
63.1(e)	Yes	§ 63.482 of subpart U specifies those subpart A definitions that apply to subpart U.
63.2	Yes	
63.3	Yes	Reserved.
63.4(a)(1)–63.4(a)(3) ..	Yes	
63.4(a)(4)	No	Reserved.
63.4(a)(5)	Yes	
63.4(b)	Yes	Reserved.
63.4(c)	Yes	
63.5(a)	Yes	Reserved.
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	§ 63.480(i) of subpart U specifies requirements.
63.5(b)(5)	Yes	
63.5(b)(6)	No	Reserved.
63.5(c)	No	
63.5(d)(1)(i)	Yes	Except that for affected sources subject to subpart U, emission estimates specified in § 63.5(d)(1)(ii)(H) are not required.
63.5(d)(1)(ii)	Yes	
63.5(d)(1)(iii)	No	§ 63.506(e)(5) of subpart U specifies Notification of Compliance Status requirements.
63.5(d)(2)	No	Except § 63.5(d)(3)(ii) does not apply.
63.5(d)(3)	Yes	
63.5(d)(4)	Yes	Except that where § 63.5(d)(1) is referred to, § 63.5(d)(1)(i) does not apply.
63.5(e)	Yes	
63.5(f)(1)	Yes	Except that where § 63.5(d)(1) is referred to, § 63.5(d)(1)(i) does not apply.
63.5(f)(2)	Yes	
63.6(a)	Yes	Reserved.
63.6(b)(1)	Yes	
63.6(b)(2)	Yes	Reserved.
63.6(b)(3)	Yes	
63.6(b)(4)	Yes	Reserved.
63.6(b)(5)	Yes	
63.6(b)(6)	No	Reserved.
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	§ 63.481 of subpart U specifies the compliance date.
63.6(c)(2)	Yes	Reserved.
63.6(c)(3)	No	
63.6(c)(4)	No	Reserved.
63.6(c)(5)	Yes	
63.6(d)	No	Reserved.
63.6(e)	Yes	Except the plan, and any records or reports of startup, shutdown and malfunction do not apply to Group 2 emission points, unless they are included in an emissions average.
63.6(f)(1)	Yes	Except that in § 63.6(f)(2)(iii)(D), paragraph 63.7(c) does not apply.
63.6(f)(2)	Yes	
63.6(f)(3)	Yes	Except that § 63.6(f)(2)(iii)(D) is not applicable.
63.6(g)	Yes	Subpart U does not require opacity and visible emission standards.
63.6(h)	No	
63.6(i)	Yes	Except for § 63.6(i)(15), which is reserved, and except that the requests for extension shall be submitted no later than the date on which the Precompliance Report is required to be submitted in § 63.506(e)(3)(i).
63.6(j)	Yes	§ 63.506(e)(5) of subpart U specifies submittal dates.
63.7(a)(1)	Yes	
63.7(a)(2)	No	§ 63.504(a)(4) of subpart U specifies notification requirements.
63.7(a)(3)	Yes	
63.7(b)	No	

TABLE 1.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART U AFFECTED SOURCES—Continued

Reference	Applies to subpart U	Comment
63.7(c)	No	Except if the owner or operator chooses to submit an alternative nonopacity emission standard for approval under § 63.6(g).
63.7(d)	Yes	
63.7(e)	Yes	Except that performance tests must be conducted at maximum representative operating conditions. In addition, some of the testing requirements specified in subpart U are not consistent with § 63.7(e)(3).
63.7(f)	No	Subpart U specifies applicable test methods and provides alternatives.
63.7(g)	Yes	Except that references to the Notification of Compliance Status report in 63.9(h) of subpart A are replaced with the requirements in § 63.506(e)(5) of subpart U.
63.7(h)	Yes	Except § 63.7(h)(4)(ii) is not applicable, since the site-specific test plans in § 63.7(c)(3) are not required.
63.8(a)(1)	Yes	
63.8(a)(2)	No	
63.8(a)(3)	No	Reserved.
63.8(a)(4)	Yes	
63.8(b)(1)	Yes	
63.8(b)(2)	No	Subpart U specifies locations to conduct monitoring.
63.8(b)(3)		
63.8(c)(1)(i)	Yes	
63.8(c)(1)(ii)	No	
63.8(c)(1)(iii)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	No	§ 63.505 of subpart U specifies monitoring frequency.
63.8(c)(5)–63.8(c)(8) ...	No	
63.8(d)	No	
63.8(e)	No	
63.8(f)(1)–63.8(f)(3) ...	Yes	
63.8(f)(4)(i)	No	Timeframe for submitting request is specified in § 63.506(f) of subpart U.
63.8(f)(4)(ii)	No	
63.8(f)(4)(iii)	No	
63.8(f)(5)(i)	Yes	
63.8(f)(5)(ii)	No	
63.8(f)(5)(iii)	Yes	
63.8(f)(6)	No	Subpart U does not require CEM's.
63.8(g)	No	Data reduction procedures specified in § 63.506(d) of subpart U.
63.9(a)	Yes	
63.9(b)	No	Subpart U does not require an initial notification.
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	No	
63.9(f)	No	Subpart U does not require opacity and visible emission standards.
63.9(g)	No	
63.9(h)	No	§ 63.506(e)(5) of subpart U specifies Notification of Compliance Status requirements.
63.9(i)	Yes	
63.9(j)	No	
63.10(a)	Yes	
63.10(b)(1)	Yes	
63.10(b)(2)	Yes	
63.10(b)(3)	No	§ 63.480(b) of subpart U requires documentation of sources that are not affected sources.
63.10(c)	No	§ 63.506 of subpart U specifies recordkeeping requirements.
63.10(d)(1)	Yes	
63.10(d)(2)	No	
63.10(d)(3)	No	Subpart U does not require opacity and visible emission standards.
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	Except that reports required by § 63.10(d)(5)(i) shall be submitted at the same time as Periodic Reports specified in § 63.506(e)(6) of subpart U. The startup, shutdown, and malfunction plan, and any records or reports of startup, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.
63.10(e)	No	
63.10(f)	Yes	
63.10(d)(4)	Yes	
63.11	Yes	
63.12	Yes	
63.13	Yes	
63.14	Yes	
63.15	Yes	

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TABLE 2. APPLICABILITY OF SUBPARTS F, G, & H TO SUBPART U AFFECTED SOURCES

Reference	Applies To subpart U	Comment	Applicable section of sub- part U
Subpart F			
63.100 63.101	No Yes	Several definitions from 63.101 are incorporated by reference into 63.482.	63.482
63.102–63.109	No		
Subpart G			
63.110 63.111	No Yes	Several definitions from 63.111 are incorporated by reference into 63.482.	63.482
63.112 63.113–63.118	No Yes		
63.119–63.123	Yes	With the differences noted in 63.485(b) through 63.485(k) ...	63.485
63.124–63.125	No	With the differences noted in 63.484(c) through 63.484(q) ...	63.484
63.126–63.130	No	Reserved	
63.131–63.147	Yes	With the differences noted in 63.501(a)(1) through 63.501(a)(8).	63.501
63.148	Yes	With the differences noted in 63.484(c) through 63.484(q) and 63.501(a)(1) through 63.501(a)(8).	63.484 and 63.501
63.149	No	Reserved	
63.150(a) through 63.150(f).	No		
63.150(g)(1) and 63.150(g)(2).	No		
63.150(g)(3)	Yes		63.503(g)(3)
63.150(g)(4)	No		
63.150(g)(5)	Yes		63.503(g)(5)
63.150(h)(1) and 63.150(h)(2).	No		
63.150(h)(3)	Yes		63.503(h)(3)
63.150(h)(4)	No		
63.150(h)(5)	Yes		63.503(h)(5)
63.150(i) through 63.150(o).	No		
63.151–63.152	No		
Subpart H			
63.160–63.193	Yes	Subpart U affected sources must comply with all requirements of subpart H.	63.502

TABLE 3.—GROUP 1 STORAGE VESSELS AT EXISTING AFFECTED SOURCES

	Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
75 ≤ capacity < 151		≥13.1
151 ≤ capacity		≥5.2

^aMaximum true vapor pressure of total organic HAP at storage temperature.

TABLE 4.—GROUP 1 STORAGE VESSELS AT NEW SOURCES

	Vessel capacity (cubic meters)	Vapor Pressure ^a (kilopascals)
38 ≤ capacity < 151		≥ 13.1
151 ≤ capacity		≥ 0.7

^aMaximum true vapor pressure of total organic HAP at storage temperature.

TABLE 5.—KNOWN ORGANIC HAP FROM ELASTOMER PRODUCTS

Organic HAP/chemical name (CAS No.)	Elastomer Product/Subcategory											
	BR	EPI	EPR	HBR	HYP	NEO	NBL	NBR	PBR/SBRS	PSR	SBL	SBRE
Acrylonitrile (107131)							✓	✓				
1,3 Butadiene (106990)							✓	✓	✓		✓	✓
Carbon Tetrachloride (56235)					✓							
Chlorobenzene (108907)					✓							
Chloroform (67663)					✓							
Chloroprene (126998)						✓						
Epichlorohydrin (106898)		✓										
Ethylbenzene (100414)	✓										✓	
Ethylene Dichloride (75343)		✓										
Ethylene Oxide (75218)		✓								✓		
Formaldehyde (50000)										✓		
Hexane (100543)	✓		✓						✓		✓	✓
Methanol (67561)	✓								✓			
Methyl Chloride (74873)	✓				✓							
Propylene Oxide (75569)		✓										
Styrene (100425)		✓							✓		✓	✓
Toluene (108883)		✓	✓			✓			✓		✓	✓
Xylenes (1330207)	✓										✓	

AAAACAS No. = Chemical Abstract Service Number.

BR = Butyl Rubber.

EPI = Epichlorohydrin Rubber.

EPR = Ethylene Propylene Rubber.

HBR = Halobutyl Rubber.

HYP = Hypalon™.

NEO = Neoprene.

NBL = Nitrile Butadiene Latex.

NBR = Nitrile Butadiene Rubber.

PBR/SBRS = Polybutadiene and Styrene Butadiene Rubber by Solution.

PSR = Polysulfide Rubber.

SBL = Styrene Butadiene Latex.

SBRE = Styrene Butadiene Rubber by Emulsion or Solution.

^aIncludes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH₂)_n -OR' where:

n=1,2, or 3;

R=alkyl or aryl groups; and

R'=R, H, or groups which, when removed, yield glycol ethers with the structure:

R-(OCH₂ CH₂)_n-OH

TABLE 6.—GROUP 1 BATCH FRONT-END PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Control/recovery device	Parameter to be monitored	Recordkeeping and reporting requirements for monitored parameters
Thermal Incinerator	Firebox temperature ^a	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.491(e)(1)^b. 2. Record and report the average firebox temperature measured during the performance test—NCS.^c 3. Record the batch cycle daily average firebox temperature as specified in § 63.491(e)(2). 4. Report all batch cycle daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}
Catalytic Incinerator	Temperature upstream and downstream of the catalyst bed.	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.491(e)(1).^b 2. Record and report the average upstream and downstream temperatures and the average temperature difference across the catalyst bed measured during the performance test—NCS.^c 3. Record the batch cycle daily average upstream temperature and temperature difference across catalyst bed as specified in § 63.491(e)(2).

TABLE 6.—GROUP 1 BATCH FRONT-END PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS—Continued

Control/recovery device	Parameter to be monitored	Recordkeeping and reporting requirements for monitored parameters
Boiler or Process Heater with a design heat input capacity less than 44 megawatts and where the batch front-end process vents or aggregate batch vent streams are <i>not</i> introduced with or used as the primary fuel.	Firebox temperature ^a	<ol style="list-style-type: none"> 4. Report all batch cycle daily average upstream temperatures that are below the minimum upstream temperature established in the NCS or operating permit—PR.^{d,e} 5. Report all batch cycle daily average temperature differences across the catalyst bed that are below the minimum difference established in the NCS or operating permit—PR.^{d,e} 6. Report all instances when monitoring data are not collected.^c 1. Continuous records as specified in § 63.491(e)(1).^b 2. Record and report the average firebox temperature measured during the performance test—NCS.^c 3. Record the batch cycle daily average firebox temperature as specified in § 63.491(e)(2).^d 4. Report all batch cycle daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}
Flare	Presence of a flame at the pilot light	<ol style="list-style-type: none"> 1. Hourly records of whether the monitor was continuously operating during batch emission episodes selected for control and whether the pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.^c 3. Record the times and durations of all periods during batch emission episodes when a pilot flame is absent or the monitor is not operating. 4. Report the times and durations of all periods during batch emission episodes selected for control when all pilot flames of a flare are absent—PR.^d
Scrubber for halogenated batch front-end process vents or aggregate batch vent streams (Note: Controlled by a combustion device other than a flare).	pH of scrubber effluent, and	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.491(e)(1).^b 2. Record and report the average pH of the scrubber effluent measured during the performance test—NCS.^c 3. Record the batch cycle daily average pH of the scrubber effluent as specified in § 63.491(e)(2). 4. Report all batch cycle daily average pH values of the scrubber effluent that are below the minimum operating pH established in the NCS or operating permit and all instances when insufficient monitoring data are collected—PR.^{d,e}
	Scrubber liquid flow rate	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.491(e)(1).^b 2. Record and report the scrubber liquid flow rate measured during the performance test—NCS.^c 3. Record the batch cycle daily average scrubber liquid flow rate as specified in § 63.491(e)(2).

TABLE 6.—GROUP 1 BATCH FRONT-END PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS—Continued

Control/recovery device	Parameter to be monitored	Recordkeeping and reporting requirements for monitored parameters
Absorber ^g	Exit temperature of the absorbing liquid, and.	<p>4. Report all batch cycle daily average scrubber liquid flow rates that are below the minimum flow rate established in the NCS or operating permit and all instances when insufficient monitoring data are collected—PR.^{d,e}</p> <p>1. Continuous records as specified in § 63.491(e)(1).^b</p> <p>2. Record and report the average exit temperature of the absorbing liquid measured during the performance test—NCS.^c</p> <p>3. Record the batch cycle daily average exit temperature of the absorbing liquid as specified in § 63.491(e)(2) for each batch cycle.</p> <p>4. Report all the batch cycle daily average exit temperatures of the absorbing liquid that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}</p>
Absorber ^f	Exit specific gravity for the absorbing liquid.	<p>1. Continuous records as specified in § 63.491(e)(1).^b</p> <p>2. Record and report the average exit specific gravity measured during the performance test—NCS.</p> <p>3. Record the batch cycle daily average exit specific gravity as specified in § 63.491(e)(2).</p> <p>4. Report all batch cycle daily average exit specific gravity values that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}</p>
Condenser ^f	Exit (product side) temperature	<p>1. Continuous records as specified in § 63.491(e)(1).^b</p> <p>2. Record and report the average exit temperature measured during the performance test—NCS.</p> <p>3. Record the batch cycle daily average exit temperature as specified in § 63.491(e)(2).</p> <p>4. Report all batch cycle daily average exit temperatures that are above the maximum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}</p>
Carbon Adsorber ^f	Total regeneration stream mass flow during carbon bed regeneration cycle(s), and.	<p>1. Record of total regeneration stream mass flow for each carbon bed regeneration cycle.</p> <p>2. Record and report the total regeneration stream mass flow during each carbon bed regeneration cycle during the performance test—NCS.^c</p> <p>3. Report all carbon bed regeneration cycles when the total regeneration stream mass flow is above the maximum mass flow rate established in the NCS or operating permit—PR.^{d,e}</p>
Carbon Adsorber ^g	Temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle(s).	<p>1. Record the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s).</p>

TABLE 6.—GROUP 1 BATCH FRONT-END PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS—Continued

Control/recovery device	Parameter to be monitored	Recordkeeping and reporting requirements for monitored parameters
All Control Devices	Presence of flow diverted to the atmosphere from the control device <i>or</i> .	2. Record and report the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s) measured during the performance test—NCS. ^c 3. Report all carbon bed regeneration cycles when the temperature of the carbon bed after regeneration, or within 15 minutes of completing any cooling cycle(s), is above the maximum temperature established in the NCS or operating permit—PR. ^{d,e} 1. Hourly records of whether the flow indicator was operating during batch emission episodes selected for control and whether flow was detected at any time during the hour, as specified in § 63.491(e)(3). 2. Record and report the times and durations of all periods during batch emission episodes selected for control when emissions are diverted through a bypass line or the flow indicator is not operating—PD. ^d
All Control Devices	Monthly inspections of sealed valves	1. Records that monthly inspections were performed as specified in § 63.491(e)(4)(i). 2. Record and report all monthly inspections that show the valves are not closed or the seal has been changed—PR. ^d
Absorber, Condenser, and Carbon Adsorber (as an alternative to the above).	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device.	1. Continuous records as specified in § 63.491(e)(1). ^b 2. Record and report the average concentration level or reading measured during the performance test—NCS. 3. Record the batch cycle daily average concentration level or reading as specified in § 63.491(e)(2). 4. Report all batch cycle daily average concentration levels or readings that are above the maximum concentration or reading established in the NCS or operating permit and all instances when monitoring data are not collected—PR. ^{d,e}

^a Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^b "Continuous records" is defined in § 63.111 of subpart G.

^c NCS = Notification of Compliance Status described in § 63.506(e)(5).

^d PR = Periodic Reports described in § 63.506(e)(6) of this subpart.

^e The periodic reports shall include the duration of periods when monitoring data are not collected as specified in § 63.506(e)(6)(iii)(C) of this subpart.

^f Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

TABLE 7.—OPERATING PARAMETERS FOR WHICH MONITORING LEVELS ARE REQUIRED TO BE ESTABLISHED FOR CONTINUOUS AND BATCH FRONT-END PROCESS VENTS AND AGGREGATE BATCH VENT STREAMS

Control/Recovery device	Parameters to be monitored	Established operating parameter(s)
Thermal incinerator	Firebox temperature	Minimum temperature.
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed.	Minimum upstream temperature; and minimum temperature difference across the catalyst bed.
Boiler or process heater	Firebox temperature	Minimum temperature.

TABLE 7.—OPERATING PARAMETERS FOR WHICH MONITORING LEVELS ARE REQUIRED TO BE ESTABLISHED FOR CONTINUOUS AND BATCH FRONT-END PROCESS VENTS AND AGGREGATE BATCH VENT STREAMS—Continued

Control/Recovery device	Parameters to be monitored	Established operating parameter(s)
Scrubber for halogenated vents	Ph of scrubber effluent; and scrubber liquid flow rate.	Minimum pH; and minimum flow rate.
Absorber	Exit temperature of the absorbing liquid; and exit specific gravity of the absorbing liquid.	Minimum temperature; and minimum specific gravity.
Condenser	Exit temperature	Maximum temperature.
Carbon absorber	Total regeneration stream mass flow during carbon bed regeneration cycle; and temperature of the carbon bed after regeneration (and within 15 minutes of completing any cooling cycle(s)).	Maximum mass flow; and maximum temperature.
Other devices (or as an alternate to the above) ^a .	HAP concentration level or reading at outlet of device.	Maximum HAP concentration or reading.

^aConcentration is measured instead of an operating parameter.

TABLE 8.—SUMMARY OF COMPLIANCE ALTERNATIVE REQUIREMENTS FOR THE BACK-END PROCESS PROVISIONS

Compliance alternative	Parameter to be monitored	Requirements
Compliance Using Stripping Technology, Demonstrated through Periodic Sampling [§ 63.495(b)].	Residual organic HAP content in each sample of crumb or latex.	(1) If batch stripping is used, at least one representative sample is to be taken from every batch. (2) If continuous stripping is used, at least one representative sample is to be taken each operating day.
Compliance Using Stripping Technology, Demonstrated through Stripper Parameter Monitoring [§ 63.495(c)].	Quantity of Material (weight of latex or dry crumb rubber) represented by each sample. At a minimum, temperature, pressure, steaming rates (for steam strippers), and some parameter that is indicative of residence time..	(1) Acceptable methods of determining this quantity are production records, measurement of stream characteristics, and engineering calculations. (1) Establish stripper operating parameter levels for each grade in accordance with § 63.505(e). (2) Continuously monitor stripper operating parameters. (3) If hourly average parameters are outside of the established operating parameter levels, a crumb or latex sample shall be taken in accordance with § 63.495(c)(3)(ii).
Determining Compliance Using Control or Recovery Devices [§ 63.496].	Parameters to be monitored are described in Table 3 of subpart G..	Comply with requirements listed in Table 3 of subpart G, except for the requirements for halogenated vent stream scrubbers.

Subpart V [Reserved]

§ 63.520 Applicability and designation of sources.

Subpart W—National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production

SOURCE: 60 FR 12676, Mar. 8, 1995, unless otherwise noted.

The provisions of this subpart apply to all existing, new, and reconstructed manufacturers of basic liquid epoxy resins (BLR) and manufacturers of wet strength resins (WSR) that are located at a plant site that is a major source, as defined in section 112(a) of the Clean Air Act. Research and development facilities, as defined in § 63.522, are exempt from the provisions of this subpart. The affected source is also defined in § 63.522. If a change occurs to

an existing source that does not constitute reconstruction then the additions have to meet the existing source requirements of the MACT standards. Any reconstruction of an existing source, or construction of a new source, must meet the new source standard. Affected sources are also subject to certain requirements of subpart A of this part, as specified in Table 1 of this subpart.

§ 63.521 Compliance schedule.

(a) Owners or operators of existing affected BLR and WSR sources shall comply with the applicable provisions of this subpart within 3 years of the promulgation date.

(b) New and reconstructed sources subject to this subpart shall be in compliance with the applicable provisions of this subpart upon startup.

§ 63.522 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Administrator means the Administrator of the U.S. Environmental Protection Agency, or any official designee of the Administrator.

Affected source means all HAP emission points within a facility that are related to the production of BLR or WSR, including process vents, storage tanks, wastewater systems, and equipment leaks.

Basic liquid epoxy resins (BLR) means resins made by reacting epichlorohydrin and bisphenol A to form diglycidyl ether of bisphenol-A (DGEBA).

Batch emission episode means a discrete venting episode that may be associated with a single unit operation. For example, a displacement of vapor resulting from the charging of a vessel with HAP will result in a discrete emission episode that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vessel vapor space. Both emission episodes may occur in the same vessel or unit operation. There are possibly other emission episodes that may occur from the

vessel or other process equipment, depending on process operations.

Batch process refers to a discontinuous process involving the bulk movement of material through sequential manufacturing steps. Mass, temperature, concentration, and other properties of a system vary with time. Addition of raw material and withdrawal of product do not typically occur simultaneously in a batch process.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission point to a control device or back into the process.

Continuous process means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady-state.

Drain system means the system used to convey wastewater streams from a process unit, product storage tank, or feed storage tank to a waste management unit. The term includes all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, down to the receiving waste management unit. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and which is segregated from all other drain systems, is excluded from this definition.

Equipment leaks means emissions of hazardous air pollutants from a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, or instrumentation system in organic hazardous air pollutant service.

Process vent means a point of emission from a unit operation. Typical process vents include condenser vents, vacuum pumps, steam ejectors, and atmospheric vents from reactors and other process vessels.

Production-based emission rate means a ratio of the amount of HAP emitted to the amount of BLR or WSR produced.

Research and development facility means laboratory operations whose primary purpose is to conduct research

and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

Storage tank means a tank or other vessel that is used to store liquids that contain one or more HAP compounds.

Unit operation means those processing steps that occur within distinct equipment that are used, among other things, to prepare reactants, facilitate reactions, separate and purify products, and recycle materials. There may be several emission episodes within a single unit operation.

Waste management unit means any component, piece of equipment, structure, or transport mechanism used in storing, treating, or disposing of wastewater streams, or conveying wastewater between storage, treatment, or disposal operations.

Wastewater means aqueous liquid waste streams exiting equipment at an affected source.

Wastewater system means a system made up of a drain system and one or more waste management units.

Wet strength resins (WSR) means polyamide/ epichlorohydrin condensates which are used to increase the tensile strength of paper products.

§ 63.523 Standards for basic liquid resins manufacturers.

(a) Owners or operators of existing affected BLR sources shall operate sources such that the rate of emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems combined shall not exceed 130 pounds per 1 million pounds of BLR produced.

(b) Owners or operators of new or reconstructed affected BLR sources shall reduce uncontrolled emissions from the sum of uncontrolled process vents, storage tanks, and wastewater systems by 98 percent, or limit the total emissions from these emission points to 5,000 pounds per year.

(1) For process vents, uncontrolled emissions are defined as gaseous emission streams past the last recovery device.

(2) For storage tanks, uncontrolled emissions are defined as emissions calculated according to the methodology specified in § 63.150(g)(3).

(3) For wastewater systems, uncontrolled emissions are the total amount of HAP discharged to the drain system.

(c) Owners or operators of existing, new, or reconstructed affected BLR sources shall comply with the requirements of subpart H of this part to control emissions from equipment leaks.

§ 63.524 Standards for wet strength resins manufacturers.

(a) Owners or operators of existing affected WSR sources shall either:

(1) Limit the total emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems to 10 pounds per 1 million pounds of wet strength resins produced; or

(2) Comply with the requirements of subpart H of this part to control emissions from equipment leaks.

(b) Owners or operators of new or reconstructed affected WSR sources shall either:

(1) Limit the total emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems to 7 pounds per 1 million pounds of wet strength resins produced; or

(2) Comply with the requirements of subpart H of this part to control emissions from equipment leaks.

§ 63.525 Compliance and performance testing.

(a) The owner or operator of any existing affected BLR source shall, in order to demonstrate initial compliance with the applicable emission limit, determine the emission rate from all process vent, storage tank, and wastewater system emission points using the methods described below. Compliance tests shall be performed under normal operating conditions.

(1) The owner or operator shall use the EPA Test Methods from 40 CFR part 60, appendix A, listed in paragraphs (a)(1) (i) through (iii) of this section, to determine emissions from process vents. Testing of process vents on equipment operating as part of a

continuous process will consist of conducting three 1-hour runs. Gas stream volumetric flow rates shall be measured every 15 minutes during each 1-hour run. Organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of each 1-hour test run, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. If the flow of gaseous emissions is intermittent, determination of emissions from process vents shall be performed according to the methods specified in paragraph (e) of this section. For process vents with continuous gas streams, the emission rate used to determine compliance shall be the average emission rate of the 3 test runs. For process vents with intermittent emission streams, the calculated emission rate or the emission rate from a single test run may be used to determine compliance.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. A traverse shall be conducted before and after each 1-hour sampling period. No traverse is necessary when using Method 2A or 2D to determine flow rate.

(ii) Method 2, 2A, 2C or 2D of 40 CFR part 60, appendix A, as appropriate, shall be used for the determination of gas stream volumetric flow rate. If Method 2 or 2C is used, the velocity measurements shall be made at a single point, in conjunction with the traverse, to establish an average velocity across the stack.

(iii) Method 25A and/or Methods 18 and 25A of 40 CFR part 60, appendix A, as appropriate, shall be used to determine the concentration of HAP in the streams.

(iv) Initial determination of de minimis status for process vents may be made by engineering assessment, as specified in § 63.526(a)(1)(iv).

(2) Emissions from wastewater treatment systems shall be determined in accordance with the methods described in 40 CFR part 63, appendix C.

(3) Emissions from storage tanks shall be calculated in accordance with the methods specified in § 63.150(g)(3).

(b) The owner or operator of any existing affected BLR source shall determine a production-based emission rate for each emission point by dividing the emission rate of each emission point by the BLR production rate of the source. The production rate shall be based on normal operations.

(1) The production-based emission rate for process vents shall be calculated by dividing the average emission rate the average production rate.

(2) The production-based emission rate for storage tanks shall be calculated by dividing annual emissions for each storage tank emission point by the production rate for a one-year period. The production rate shall be calculated using the same data used to calculate the production-based emission rate in paragraph (b)(1) of this section, converted to an annual rate.

(3) The production-based emission rate for wastewater systems shall be calculated by dividing annual emissions for each wastewater system emission point by the production rate for one-year period. The production rate shall be calculated using the same data used to calculate the production-based emission rate in paragraph (b)(1) of this section, converted to an annual rate.

(c) The owner or operator of an existing affected BLR source shall calculate the total emissions per product produced by summing the production-based emissions for all process vent, storage tank, and wastewater system emission points according to the following equation:

$$E = \sum PV + \sum ST + \sum WW$$

where:

E=emissions, pounds (lb) HAP per million (MM) lb product;

PV=process vent emissions, lb HAP/MM lb product;

ST=storage tank emissions, lb HAP/MM lb product; and

WW=wastewater system emissions, lb HAP/MM lb product.

The source is in compliance with the standard for process vents, storage tanks, and wastewater systems if the sum of the equation is less than the applicable emission limit from § 63.523(a).

(d) The owner or operator of any new or reconstructed affected BLR source shall demonstrate compliance using the methods described in this section.

(1) Any owner or operator who elects to comply with § 63.523(b) by achieving 98 percent control of emissions from process vents, storage tanks, and wastewater systems shall demonstrate compliance according to the requirements of paragraphs (d)(1) (i) through (iv) of this section.

(i) The owner or operator shall perform testing as specified in paragraph (a)(1) of this section to determine controlled and uncontrolled emissions from process vents. Sampling points for determining uncontrolled emissions shall be located based on the definition of uncontrolled process vents in § 63.523(b)(1).

(ii) The owner or operator shall calculate controlled and uncontrolled emissions from storage tanks in accordance with the methods specified in § 63.150(g)(3).

(iii) The owner or operator shall determine controlled and uncontrolled emissions from wastewater systems using the methodology of 40 CFR part 63, appendix C. Uncontrolled emission calculations shall be consistent with the definition of uncontrolled wastewater system emissions in § 63.523(b)(3).

(iv) The owner or operator shall calculate the percent reduction in emissions from process vents, storage tanks, and wastewater systems combined. The affected source is in compliance if the emission reduction is greater than or equal to 98 percent.

(2) Any owner or operator who elects to comply with § 63.523(b) by limiting HAP emissions from process vents, storage tanks, and wastewater systems to 5,000 pounds per year or less shall demonstrate compliance according to the requirements of paragraphs (d)(2) (i) and (ii) of this section.

(i) Emissions from process vents, storage tanks, and wastewater systems shall be determined according to paragraphs (a) (1) through (3) of this section. Emissions shall be converted to annual emissions. Annual emission calculations shall reflect production levels representative of normal operating conditions.

(ii) The owner or operator shall calculate total emissions from all process vent, storage tank, and wastewater system emission points. The affected source is in compliance with the standard if total emissions are less than or equal to 5,000 lb/yr.

(e) The owner or operator of any existing, new, or reconstructed WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall demonstrate initial compliance by determining emissions for all process vent, storage tank, and wastewater systems emission points using the methods described in this section.

(1) Emissions of HAP reactor process vents shall be calculated for each batch emission episode according to the methodologies described in paragraph (e)(1) of this section.

(i) Emissions from vapor displacement due to transfer of material into or out of the reactor shall be calculated according to the following equation:

$$E = \frac{(y_i)(V)(P_T)(MW)}{(R)(T)}$$

where:

E=mass emission rate;

y_i =saturated mole fraction of HAP in the vapor phase;

V=volume of gas displaced from the vessel;

R=ideal gas law constant;

T=temperature of the vessel vapor space; absolute;

P_T =pressure of the vessel vapor space; and

MW=molecular weight of the HAP.

(ii) Emissions from reactor purging shall be calculated using the methodology described in paragraph (e)(1)(i) of this section, except that for purge flow rates greater than 100 standard cubic feet per minute (scfm), the mole fraction of HAP will be assumed to be 25 percent of the saturated value.

(iii) Emissions caused by heating of the reactor vessel shall be calculated according to the following methodology:

$$E = \frac{\frac{\sum (P_i)_{T1}}{Pa_1} + \frac{\sum (P_i)_{T2}}{Pa_2}}{2} \times \Delta\eta \times MW_{HAP}$$

where:

E=mass of HAP vapor displaced from the vessel being heated up;

(P_i)_{Tn}=partial pressure of each HAP in the vessel headspace at initial (n=1) and final (n=2) temperature;

Pa₁=initial gas pressure in the vessel;

Pa₂=final gas pressure; and

MW_{HAP}=the average molecular weight of HAP present in the vessel.

The moles of gas displaced is represented by:

$$\Delta\eta = \frac{V}{R} \left[\left(\frac{Pa_1}{T_1} \right) - \left(\frac{Pa_2}{T_2} \right) \right]$$

where:

Δη=number of lb-moles of gas displaced;

V=volume of free space in the vessel;

R=ideal gas law constant;

Pa₁=initial gas pressure in the vessel;

Pa₂=final gas pressure;

T₁=initial temperature of vessel; and

T₂=final temperature of vessel.

The initial pressure of the non-condensable gas in the vessel shall be calculated according to the following equation:

$$Pa_1 = P_{atm} - \sum (P_{ic})_{T1}$$

where:

Pa₁=initial partial pressure of gas in the vessel headspace;

P_{atm}=atmospheric pressure; and

(P_{ic})_{T1}=initial partial pressure of each condensable volatile organic compound (including HAP) in the vessel headspace, at the initial temperature (T₁).

The average molecular weight of HAP in the displaced gas shall be calculated as follows:

$$MW_{HAP} = \frac{\sum_{i=1}^n (\text{mass of HAP})_i}{\sum_{i=1}^n \frac{(\text{mass of HAP})_i}{(\text{HAP molecular weight})_i}}$$

where n is the number of different HAP compounds in the emission stream.

(2) Emissions of HAP from process vents may be measured directly. The EPA Test Methods listed in paragraph (e)(2) (i) through (iii) of this section, from 40 CFR part 60, appendix A, shall be used to demonstrate compliance with the requirements of § 63.524 by direct measurement. Testing shall be performed for every batch emission episode of the unit operation. Gas stream volumetric flow rates shall be measured at 15-minute intervals, or at least once during each batch emission episode. Organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of each episode, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. Test conditions shall represent the normal operating conditions under which the data used to calculate the production rate are taken.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. A traverse shall be conducted before and after each sampling period. No traverse is necessary when using Method 2A or 2D.

(ii) Method 2, 2A, 2C or 2D of 40 CFR part 60, appendix A, as appropriate, shall be used for the determination of

gas stream volumetric flow rate. If Method 2 or 2C is used, the velocity measurements shall be made at a single point than can be used, in conjunction with the traverse, to establish an average velocity across the stack.

(iii) Method 25A and/or Methods 18 and 25A of 40 CFR part 60, appendix A, as appropriate, shall be used to determine the concentration of HAP in the streams.

(iv) The owner or operator may choose to perform tests only during those periods of the episode in which the emission rate for the entire episode can be determined, or when the emissions are greater than the average emission rate of the episode. The owner or operator who chooses either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances, and process stoichiometry. Previous test results may be used provided the results are still relevant to the current process vent stream conditions.

(v) For batch emission episodes of duration greater than 8 hours, the owner or operator is required to perform a maximum of 8 hours of testing. The test period must include the period of time in which the emission rate is predicted by the emission profile to be greater than average emission rate for the batch emission episode.

(f) The owner or operator of any affected WSR source that chooses to comply with the emissions limit for process vents, storage tanks, and wastewater systems shall calculate emissions from storage tanks in accordance with the methods specified in § 63.150(g)(3).

(g) The owner or operator of any affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall calculate emissions from wastewater treatment systems (if applicable) in accordance with the methods described in 40 CFR part 63, appendix C.

(h) The owner or operator of any affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall calculate the average amount of WSR product manufactured per batch, using data from performance tests or from emission calculations, as applicable, to determine the average WSR production per batch production data for an annual period representing normal operating conditions.

(1) The owner or operator shall calculate an average emission rate per batch as the average of the results from the performance tests or calculations. The production-based emission rate shall be calculated by dividing the emissions per batch by the average production per batch.

(2) Compliance shall be determined according to the methodology described in paragraph (c) of this section. The source is in compliance with the standard for process vents, storage tanks, and wastewater systems if the sum of the equation in paragraph (c) of this section is less than the applicable emission limit from § 63.524.

(i) The owner or operator of any affected BLR source or any affected WSR source that chooses to comply with the requirements of subpart H of this part must demonstrate the ability of its specific program to meet the compliance requirements therein to achieve initial compliance.

§ 63.526 Monitoring requirements.

(a) The owner or operator of any existing, new, or reconstructed affected BLR source shall provide evidence of continued compliance with the standard. During the initial compliance demonstration, maximum or minimum operating parameters, as appropriate, shall be established for processes and control devices that will indicate the source is in compliance. If the operating parameter to be established is a maximum, the value of the parameter shall be the average of the maximum values from each of the three test runs. If the operating parameter to be established is a minimum, the value of the parameter shall be the average of the minimum values from each of the three test runs. Parameter values for process

vents with intermittent emission streams shall be determined as specified in paragraph (b)(1) of this section. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard. A de minimis level is specified in paragraph (a)(1) of this section. Monitoring parameters are specified for various process vent control scenarios in paragraphs (a) (2) through (6) of this section.

(1) For affected BLR sources, uncontrolled emission points emitting less than one pound per year of HAP are not subject to the monitoring requirements of paragraphs (a) (2) through (6) of this section. The owner or operator shall use the methods specified in § 63.525(a), as applicable, or as specified in paragraph (a)(1)(i) of this section, to demonstrate which emission points satisfy the de minimis criteria, to the satisfaction of the Administrator.

(i) For the purpose of determining de minimis status for emission points, engineering assessment may be used to determine process vent stream flow rate and/or concentration for the representative operating conditions expected to yield the highest flow rate and concentration. Engineering assessment includes, but is not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, HAP emission rate, concentration, or other relevant parameter specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(3) Estimation of HAP concentrations based on saturation conditions.

(ii) All data, assumptions, and procedures used in the engineering assessment shall be documented in accordance with § 63.527(c).

(2) For affected sources using water scrubbers, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over any continuous 24-hour period, is below the minimum value established during the initial compliance demonstration.

(3) For affected sources using condensers, the owner or operator shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the condenser outlet gas temperature, averaged over any continuous 24-hour period, is greater than the maximum value established during the initial compliance demonstration.

(4) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over any continuous 24-hour period, is greater than the maximum value established during the initial compliance demonstration.

(5) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes. The affected source will be considered to be out of compliance upon loss of pilot flame.

(6) Wastewater system parameters to be monitored are the parameters specified under 40 CFR part 414, subpart E. The affected source will be considered to be out of compliance with this subpart W if it is found to be out of compliance with 40 CFR part 414, subpart E.

(b) The owner or operator of any existing, new, or reconstructed affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems shall provide evidence of continued compliance with the standard. As part of the initial compliance demonstrations for batch process vents, test data or compliance calculations shall be used to establish a maximum or minimum level of a relevant operating parameter for each unit operation. The parameter value for each unit operation shall represent the worst case value of the operating parameter from all episodes in the unit operation. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard.

(1) For batch process vents, the level shall be established in accordance with paragraphs (b)(1)(i) through (iv) of this section if compliance testing is performed.

(i) If testing is used to demonstrate initial compliance, the appropriate parameter shall be monitored during all batch emission episodes in the unit operation.

(ii) An average monitored parameter value shall be determined for each of the batch emission episodes in the unit operation.

(iii) If the level to be established for the unit operation is a maximum operating parameter, the level shall be defined as the minimum of the average parameter values determined in paragraph (b)(1)(ii) of this section.

(iv) If the level to be established for the unit operation is a minimum operating parameter, the level shall be defined as the maximum of the average parameter values determined in paragraph (b)(1)(ii) of this section.

(2) Affected sources with condensers on process vents shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter, which must be measured every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the maximum condenser outlet gas temperature, averaged over the duration of the batch emission epi-

sode or unit operation, is greater than the value established during the initial compliance demonstration.

(3) For affected sources using water scrubbers, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over the duration of the batch emission episode or unit operation, is below the minimum flow rate established during the initial compliance demonstration.

(4) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes, or at least once for batch emission episodes of duration shorter than 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over the duration of the batch emission episode or unit operation, is greater than the value established during the initial compliance demonstration.

(5) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance upon loss of pilot flame.

(6) Wastewater system parameters to be monitored are the parameters specified by 40 CFR part 414, subpart E. The affected source will be considered to be out of compliance with this subpart W if it is found to be out of compliance with 40 CFR part 414, subpart E.

(c) Periods of time when monitoring measurements exceed the parameter values do not constitute a violation if they occur during a startup, shutdown, or malfunction, and the facility follows its startup, shutdown, and malfunction plan.

(d) The owner or operator of any affected WSR source that chooses to

comply with the requirements of subpart H of this part shall meet the monitoring requirements of subpart H of this part.

§ 63.527 Recordkeeping requirements.

(a) The owner or operator of any affected BLR source shall keep records of daily average values of equipment operating parameters specified to be monitored under § 63.526(a) or specified by the Administrator. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table of this subpart. The owner or operator shall keep records up-to-date and readily accessible.

(1) A daily (24-hour) average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(2) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status in § 63.9(h) of subpart A of this part. It may be from midnight to midnight or another continuous 24-hour period.

(3) In the event of an excursion, the owner or operator must keep records of each 15-minute reading during the period in which the excursion occurred.

(b) The owner or operator of any affected WSR source that elects to comply with the emission limit for process vents, storage tanks, and wastewater systems shall keep records of values of equipment operating parameters specified to be monitored under § 63.526(b) or specified by the Administrator. The records that shall be kept are the average values of operating parameters, determined for the duration of each unit operation. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table in this subpart. The owner or operator shall keep records up-to-date and readily accessible. In the event of an excursion, the owner or operator must keep records of each 15-minute reading for

the entire unit operation in which the excursion occurred.

(c) The owner or operator of any affected BLR source, as well the owner or operator of any affected WSR source that chooses to comply with the emission limit for process vents, storage tanks, and wastewater systems, who demonstrates that certain process vents are below the de minimis cutoff for continuous monitoring specified in § 63.526(a)(1)(i), shall maintain up-to-date, readily accessible records of the following information to document that a HAP emission rate of less than one pound per year is maintained:

(1) The information used to determine de minimis status for each de minimis process vent, as specified in § 63.526(a)(1)(i);

(2) Any process changes as defined in § 63.115(e) of subpart G of this part that increase the HAP emission rate;

(3) Any recalculation or measurement of the HAP emission rate pursuant to § 63.115(e) of subpart G of this part; and

(4) Whether or not the HAP emission rate increases to one pound per year or greater as a result of the process change.

(d) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source who elects to implement the leak detection and repair program specified in subpart H of this part, shall implement the recordkeeping requirements outlined therein. All records shall be retained for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

(e) Any excursion from the required monitoring parameter, unless otherwise excused, shall be considered a violation of the emission standard.

§ 63.528 Reporting requirements.

(a) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source that elects to comply with the emission limit for process vents, storage tanks, and wastewater systems, shall comply with the reporting requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table in this subpart. The owner

or operator shall also submit to the Administrator, as part of the quarterly excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e)(3) of subpart A of this part, the following recorded information.

(1) Reports of monitoring data, including 15-minute monitoring values as well as daily average values or per-unit operation average values, as applicable, of monitored parameters for all operating days or unit operations when the average values were outside the ranges established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data. An excursion means any of the three cases listed in paragraph (a)(2)(i) or (a)(2)(ii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (a)(2)(i) or (a)(2)(ii) of this section, this is considered a single excursion for the control device.

(i) When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data, as defined in paragraph (a)(2)(iii) of this section, for at least 75 percent of the operating hours.

(ii) When the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(iii) Monitoring data are insufficient to constitute a valid hour of data, as

used in paragraphs (a)(2) (i) and (ii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour.

(3) Whenever a process change, as defined in § 63.115(e) of subpart G of this part, is made that causes the emission rate from a de minimis emission point to become a process vent with an emission rate of one pound per year or greater, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next summary report required under § 63.10(e)(3) of subpart A of this part. The report shall include:

(i) A description of the process change; and

(ii) The results of the recalculation of the emission rate.

(b) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source who elects to implement the leak detection and repair program specified in subpart H of this part, shall implement the reporting requirements outlined therein. Copies of all reports shall be retained as records for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

(c) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source that elects to comply with the emission limit for process vents, storage tanks, and wastewater systems shall include records of wastewater system monitoring parameters in the Notification of Compliance Status and summary reports required by subpart A of this part.

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W

Reference	Applies to subpart W			Comment
	BLR	WSR	WSR alternative standard, and BLR equipment leak standard (40 CFR part 63, subpart H)	
§ 63.1(a)(1)	Yes	Yes	Yes	Additional terms defined in § 63.522.
§ 63.1(a)(2)	Yes	Yes	Yes.	
§ 63.1(a)(3)	Yes	Yes	Yes.	
§ 63.1(a)(4)	Yes	Yes	Yes	
§ 63.1(a)(5)	N/A	N/A	N/A	Subpart W specifies applicability of each paragraph in subpart A to subpart W. Reserved.

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TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W—Continued

Reference	Applies to subpart W			Comment
	BLR	WSR	WSR alternative standard, and BLR equipment leak standard (40 CFR part 63, subpart H)	
§ 63.1(a)(6)	Yes	Yes	Yes.	Discusses State programs. Reserved.
§ 63.1(a)(7)	Yes	Yes	Yes.	
§ 63.1(a)(8)	No	No	No	
§ 63.1(a)(9)	N/A	N/A	N/A	
§ 63.1(a)(10)	Yes	Yes	Yes.	
§ 63.1(a)(11)	Yes	Yes	Yes.	§ 63.521 of subpart W specifies applicability.
§ 63.1(a)(12)–(14)	Yes	Yes	Yes.	
§ 63.1(b)(1)	No	No	No	
§ 63.1(b)(2)	Yes	Yes	Yes.	
§ 63.1(b)(3)	Yes	Yes	Yes.	
§ 63.1(c)(1)	Yes	Yes	Yes	Subpart W specifies applicability of each paragraph in subpart A to sources subject to subpart W. Area sources are not subject to subpart W. Reserved.
§ 63.1(c)(2)	No	No	No	
§ 63.1(c)(3)	N/A	N/A	N/A	
§ 63.1(c)(4)	Yes	Yes	Yes.	
§ 63.1(c)(5)	Yes	Yes	No	
§ 63.1(d)	N/A	N/A	N/A	Subpart H specifies applicable notification requirements. Reserved.
§ 63.1(e)	Yes	Yes	Yes.	
§ 63.2	Yes	Yes	Yes	
§ 63.3	Yes	Yes	No	
§ 63.4(a)(1)–(3)	Yes	Yes	Yes.	
§ 63.4(a)(4)	N/A	N/A	N/A	Reserved.
§ 63.4(a)(5)	Yes	Yes	Yes.	
§ 63.4(b)	Yes	Yes	Yes.	
§ 63.4(c)	Yes	Yes	Yes.	
§ 63.5(a)	Yes	Yes	Yes	
§ 63.5(b)(1)	Yes	Yes	Yes.	Except replace the terms “source” and “stationary source” in § 63.5(a)(1) of subpart A with “affected source”.
§ 63.5(b)(2)	N/A	N/A	N/A	
§ 63.5(b)(3)	Yes	Yes	Yes.	
§ 63.5(b)(4)	Yes	Yes	Yes.	
§ 63.5(b)(5)	Yes	Yes	Yes.	
§ 63.5(b)(6)	Yes	Yes	Yes.	Reserved.
§ 63.5(c)	N/A	N/A	N/A	
§ 63.5(d)(1)(i)	Yes	Yes	Yes.	
§ 63.5(d)(1)(iii)	Yes	Yes	Yes.	
§ 63.5(d)(2)	Yes	Yes	Yes.	
§ 63.5(d)(3)–(4)	Yes	Yes	Yes.	Except replace “source” in § 63.5(f)(1) of subpart A with “affected source”.
§ 63.5(e)	Yes	Yes	Yes.	
§ 63.5(f)(1)	Yes	Yes	Yes	
§ 63.5(f)(2)	Yes	Yes	Yes.	
§ 63.6(a)	Yes	Yes	Yes.	
§ 63.6(b)(1)–(2)	No	No	No	Subpart W specifies compliance dates.
§ 63.6(b)(3)–(4)	Yes	Yes	Yes.	
§ 63.6(b)(5)	Yes	Yes	No	
§ 63.6(b)(6)	N/A	N/A	N/A	
§ 63.6(b)(7)	No	Yes	No	
§ 63.6(c)(1)–(2)	Yes	Yes	Yes	Subpart H includes notification requirements. Reserved.
§ 63.6(c)(3)–(4)	N/A	N/A	N/A	
§ 63.6(c)(5)	Yes	Yes	Yes.	
§ 63.6(d)	N/A	N/A	N/A	
§ 63.6(e)	Yes	Yes	Yes.	

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W—Continued

Reference	Applies to subpart W			Comment
	BLR	WSR	WSR alternative standard, and BLR equipment leak standard (40 CFR part 63, subpart H)	
§ 63.6(f)(1)	Yes	Yes	Yes.	An alternative standard has been proposed for WSR; however, affected sources will have the opportunity to demonstrate other alternatives to the Administrator.
§ 63.6(f)(2)(i)–(ii)	Yes	Yes	Yes.	
§ 63.6(f)(2)(iii)	Yes	Yes	Yes.	
§ 63.6(f)(2)(iv)	Yes	Yes	Yes.	
§ 63.6(f)(3)	Yes	Yes	Yes.	
§ 63.6(g)	Yes	Yes	Yes	Subpart W does not contain any opacity or visible emissions standards.
§ 63.6(h)	No	No	No	
§ 63.6(i)(1)	Yes	Yes	Yes.	Except replace “source” in § 63.6(2) (i) and (ii) of subpart A with “affected source”.
§ 63.6(i)(2)	Yes	Yes	Yes	
§ 63.6(i)(3)	Yes	Yes	Yes.	Reserved.
§ 63.6(i)(4)(i)	Yes	Yes	Yes.	
§ 63.6(i)(4)(ii)	Yes	Yes	Yes.	
§ 63.6(i)(5)–(14)	Yes	Yes	Yes.	
§ 63.6(i)(15)	N/A	N/A	N/A	
§ 63.6(i)(16)	Yes	Yes	Yes.	Subpart H specifies required testing and compliance procedures.
§ 63.6(j)	Yes	Yes	Yes.	
§ 63.7(a)(1)	Yes	Yes	No	Subpart H specifies that test results must be submitted in the Notification of Compliance Status due 150 days after the compliance date.
§ 63.7(a)(2)(i)–(vi)	Yes	Yes	No	
§ 63.7(a)(2)(vii)–(viii)	N/A	N/A	N/A	Reserved.
§ 63.7(a)(2)(ix)	Yes	Yes	Yes.	
§ 63.7(a)(3)	Yes	Yes	Yes.	Except replace “source” in § 63.7(d) of subpart A with “affected source”.
§ 63.7(b)(1)	Yes	Yes	Yes.	
§ 63.7(b)(2)	Yes	Yes	Yes.	
§ 63.7(c)	No	No	No.	
§ 63.7(d)	Yes	Yes	Yes	
§ 63.7(e)(1)	Yes	Yes	Yes	Subpart W also contains test methods specific to BLR and WSR sources.
§ 63.7(e)(2)	Yes	Yes	Yes.	
§ 63.7(e)(3)	Yes	Yes	No	Subpart H specifies test methods and procedures.
§ 63.7(f)	Yes	Yes	No	
§ 63.7(g)(1)	Yes	Yes	No	Subpart H specifies applicable methods and provides alternatives.
§ 63.7(g)(2)	N/A	N/A	N/A	
§ 63.7(g)(3)	Yes	Yes	Yes.	Subpart H specifies performance test reporting.
§ 63.7(h)(1)–(2)	Yes	Yes	Yes.	
§ 63.7(h)(3)(i)	Yes	Yes	Yes.	Reserved.
§ 63.7(h)(3)(ii)–(iii)	Yes	Yes	Yes.	
§ 63.7(h)(4)–(5)	Yes	Yes	Yes.	
§ 63.8(a)(1)	Yes	Yes	Yes.	
§ 63.8(a)(2)	Yes	Yes	Yes.	
§ 63.8(a)(3)	N/A	N/A	N/A	Reserved.
§ 63.8(a)(4)	Yes	Yes	Yes.	
§ 63.8(b)(1)	Yes	Yes	Yes.	Subpart H specifies locations to conduct monitoring.
§ 63.8(b)(2)	Yes	Yes	No	
§ 63.8(b)(3)	Yes	Yes	Yes.	Subpart W specifies monitoring frequencies.
§ 63.8(c)(1)(i)	Yes	Yes	Yes.	
§ 63.8(c)(1)(ii)	Yes	Yes	Yes.	
§ 63.8(c)(1)(iii)	Yes	Yes	Yes.	
§ 63.8(c)(2)–(3)	Yes	Yes	Yes.	
§ 63.8(c)(4)–(8)	No	No	No	Subpart W specifies monitoring frequencies.
§ 63.8(d)	No	No	No.	
§ 63.8(e)	No	No	No.	

TABLE 1 TO SUBPART W—GENERAL PROVISIONS APPLICABILITY TO SUBPART W—Continued

Reference	Applies to subpart W			Comment
	BLR	WSR	WSR alternative standard, and BLR equipment leak standard (40 CFR part 63, subpart H)	
§ 63.8(f)(1)	Yes	Yes	Yes.	Separate Notification of Compliance Status requirements are specified for subpart H. Reserved. Subpart H specifies Notification of Compliance Status requirements. Subparts H and W specify recordkeeping requirements. Subpart H specifies performance test reporting requirements. Subpart H specifies performance test reporting requirements.
§ 63.8(f)(2)	Yes	Yes	Yes.	
§ 63.8(f)(3)	Yes	Yes	Yes.	
§ 63.8(f)(4)	Yes	Yes	Yes.	
§ 63.8(f)(5)	Yes	Yes	Yes.	
§ 63.8(f)(6)	Yes	Yes	No.	
§ 63.8(g)	Yes	Yes	Yes.	
§ 63.9(a)	Yes	Yes	Yes.	
§ 63.9(b)(1)(i)–(ii)	Yes	Yes	Yes.	
§ 63.9(b)(1)(iii)	Yes	Yes	Yes.	
§ 63.9(b)(2)	Yes	Yes	Yes.	
§ 63.9(b)(3)	Yes	Yes	Yes.	
§ 63.9(b)(4)	Yes	Yes	Yes.	
§ 63.9(b)(5)	Yes	Yes	Yes.	
§ 63.9(c)	Yes	Yes	Yes.	
§ 63.9(d)	Yes	Yes	Yes.	
§ 63.9(e)	No	No	No.	
§ 63.9(f)	No	No	No.	
§ 63.9(g)	No	No	No.	
§ 63.9(h)(1)–(3)	Yes	Yes	No	
§ 63.9(h)(4)	N/A	N/A	N/A	
§ 63.9(h)(5)–(6)	Yes	Yes	No	
§ 63.9(i)	Yes	Yes	Yes.	
§ 63.9(j)	Yes	Yes	Yes.	
§ 63.10(a)	Yes	Yes	Yes.	
§ 63.10(b)(1)	Yes	Yes	Yes.	
§ 63.10(b)(2)	No	No	No	
§ 63.10(b)(3)	Yes	Yes	Yes.	Subpart H specifies performance test reporting requirements. Subpart H specifies performance test reporting requirements.
§ 63.10(c)(1)–(6)	No	No	No.	
§ 63.10(c)(7)–(8)	Yes	Yes	Yes.	
§ 63.10(c)(9)–(15)	No	No	No.	
§ 63.10(d)(1)	Yes	Yes	No	
§ 63.10(d)(2)	Yes	Yes	No	
§ 63.10(d)(3)	No	No	No.	
§ 63.10(d)(4)	Yes	Yes	Yes.	
§ 63.10(d)(5)	Yes	Yes	Yes.	
§ 63.10(e)(1)–(2)	No	No	No.	
§ 63.10(e)(3)	Yes	Yes	No.	Subpart H specifies performance test reporting requirements.
§ 63.10(e)(4)	No	No	No.	
§ 63.10(f)	Yes	Yes	Yes.	
§ 63.11–63.15	Yes	Yes	Yes.	

Subpart X—National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting

SOURCE: 62 FR 32216, June 13, 1997, unless otherwise noted.

§ 63.541 Applicability.

(a) The provisions of this subpart apply to the following affected sources at all secondary lead smelters: blast, reverberatory, rotary, and electric smelting furnaces; refining kettles; agglomerating furnaces; dryers; process fugitive sources; and fugitive dust sources. The provisions of this subpart do not apply to primary lead smelters, lead refiners, or lead remelters.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of secondary lead smelters subject to this subpart.

TABLE 1.—GENERAL PROVISIONS APPLICABILITY TO SUBPART X

Reference	Applies to subpart X	Comment
63.1	Yes.	
63.2	Yes.	
63.3	Yes.	
63.4	Yes.	
63.5	Yes.	
63.6 (a), (b), (c), (e), (f), (g), (i) and (j)	Yes.	
63.6 (d) and (h)	No	No opacity limits in rule.
63.7	Yes.	
63.8	Yes.	
63.9 (a), (b), (c), (d), (e), (g), (h)(1–3), (h)(5–6), and (j)	Yes.	
63.9 (f) and (h)(4)	No	No opacity or visible emission limits in subpart X.
63.10	Yes.	
63.11	No	Flares will not be used to comply with the emission limits.
63.12 to 63.15	Yes.	

§63.542 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Agglomerating furnace means a furnace used to melt into a solid mass flue dust that is collected from a baghouse.

Bag leak detection system means an instrument that is capable of monitoring particulate matter (dust) loadings in the exhaust of a baghouse in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, transmittance or other effect to monitor relative particulate matter loadings.

Battery breaking area means the plant location at which lead-acid batteries are broken, crushed, or disassembled and separated into components.

Blast furnace means a smelting furnace consisting of a vertical cylinder atop a crucible, into which lead-bearing charge materials are introduced at the top of the furnace and combustion air is introduced through tuyeres at the bottom of the cylinder, and that uses coke as a fuel source and that is operated at such a temperature in the combustion zone (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Blast furnace charging location means the physical opening through which

raw materials are introduced into a blast furnace.

Collocated blast furnace and reverberatory furnace means operation at the same location of a blast furnace and a reverberatory furnace with the volumetric flow rate discharged from the blast furnace being at equal to or less than that discharged from the reverberatory furnace.

Dryer means a chamber that is heated and that is used to remove moisture from lead-bearing materials before they are charged to a smelting furnace.

Dryer transition piece means the junction between a dryer and the charge hopper or conveyor, or the junction between the dryer and the smelting furnace feed chute or hopper located at the ends of the dryer.

Electric furnace means a smelting furnace consisting of a vessel into which reverberatory furnace slag is introduced and that uses electrical energy to heat the reverberatory furnace slag to such a temperature (greater than 980 °C) that lead compounds are reduced to elemental lead metal.

Enclosure hood means a hood that covers a process fugitive emission source on the top and on all sides, with openings only for access to introduce or remove materials to or from the source and through which an induced flow of air is ventilated.

Fugitive dust source means a stationary source of hazardous air pollutant

emissions at a secondary lead smelter that is not associated with a specific process or process fugitive vent or stack. Fugitive dust sources include, but are not limited to, roadways, storage piles, materials handling transfer points, materials transport areas, storage areas, process areas, and buildings.

Furnace and refining/casting area means any area of a secondary lead smelter in which:

- (1) Smelting furnaces are located; or
- (2) Refining operations occur; or
- (3) Casting operations occur.

High efficiency particulate air (HEPA) filter means a filter that has been certified by the manufacturer to remove 99.97 percent of all particles 0.3 micrometers and larger.

Lead alloy means an alloy in which the predominant component is lead.

Materials storage and handling area means any area of a secondary lead smelter in which lead-bearing materials (including, but not limited to, broken battery components, reverberatory furnace slag, flue dust, and dross) are stored or handled between process steps including, but not limited to, areas in which materials are stored in piles, bins, or tubs, and areas in which material is prepared for charging to a smelting furnace. Materials storage and handling area does not include areas used exclusively for storage of blast furnace slag.

Partial enclosure means a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter surrounding stored materials or process equipment to prevent the entrainment of particulate matter into the air.

Pavement cleaning means the use of vacuum equipment, water sprays, or a combination thereof to remove dust or other accumulated material from the paved areas of a secondary lead smelter.

Plant roadway means any area of a secondary lead smelter that is subject to vehicle traffic, including traffic by fork lifts, front-end loaders, or vehicles carrying whole batteries or cast lead ingots. Excluded from this definition are employee and visitor parking areas, provided they are not subject to traffic by vehicles carrying lead-bearing materials.

Process fugitive emission source means a source of hazardous air pollutant emissions at a secondary lead smelter that is associated with lead smelting or refining, but is not the primary exhaust stream from a smelting furnace, and is not a fugitive dust source. Process fugitive sources include, but are not limited to, smelting furnace charging points, smelting furnace lead and slag taps, refining kettles, agglomerating furnaces, and drying kiln transition pieces.

Refining kettle means an open-top vessel that is constructed of cast iron or steel and is indirectly heated from below and contains molten lead for the purpose of refining and alloying the lead. Included are pot furnaces, receiving kettles, and holding kettles.

Reverberatory furnace means a refractory-lined furnace that uses one or more flames to heat the walls and roof of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Rotary furnace (also known as a rotary reverberatory furnace) means a furnace consisting of a refractory-lined chamber that rotates about a horizontal axis and that uses one or more flames to heat the walls of the furnace and lead-bearing scrap to such a temperature (greater than 980 °C) that lead compounds are chemically reduced to elemental lead metal.

Secondary lead smelter means any facility at which lead-bearing scrap material, primarily, but not limited to, lead-acid batteries, is recycled into elemental lead or lead alloys by smelting.

Smelting means the chemical reduction of lead compounds to elemental lead or lead alloys through processing in high-temperature (greater than 980 °C) furnaces including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.

Total enclosure means a roofed and walled structure with limited openings to allow access and egress for people and vehicles that meets the requirements of 40 CFR 265.1101(a)(1), (a)(2)(i), and (c)(1)(i).

Vehicle wash means a device for removing dust and other accumulated material from the wheels, body, and

underside of a vehicle to prevent the inadvertent transfer of lead contaminated material to another area of a secondary lead smelter or to public roadways.

Wet suppression means the use of water, water combined with a chemical surfactant, or a chemical binding agent to prevent the entrainment of dust into the air from fugitive dust sources.

§ 63.543 Standards for process sources.

(a) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast, reverberatory, rotary, or electric smelting furnace any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

(b) [Reserved]

(c) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast furnace or reverberatory furnace any gases that contain total hydrocarbons in excess of 20 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, except as allowed under Paragraphs (c)(1) and (c)(2) of this section.

(1) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

(2) No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon di-

oxide, during periods when the reverberatory furnace is not operating.

(d) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(e) No owner or operator of a secondary lead smelter with only blast furnaces shall discharge or cause to be discharged into the atmosphere from any blast furnace that commences construction or reconstruction after June 9, 1994, any gases that contain total hydrocarbons in excess of 70 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

(f) If the owner or operator of a blast furnace or collocated blast furnace and reverberatory furnace combines the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges them to the atmosphere through a common emission point, then compliance with the applicable total hydrocarbon concentration limit under paragraph (c) of this section shall be determined downstream from the point at which the two emission streams are combined.

(g) If the owner or operator of a blast furnace or a collocated blast furnace and reverberatory furnace does not combine the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges such emissions to the atmosphere through separate emission points, then the total hydrocarbon emission rate for the blast furnace process fugitive emissions shall not be greater than 0.20 kilograms per hour (0.44 pounds per hour).

(h) Except as provided in paragraph (i) of this section, following the initial test to demonstrate compliance with paragraph (a) of this section, the owner or operator of a secondary lead smelter shall conduct a compliance test for lead compounds on an annual basis (no later than 12 calendar months following the previous compliance test).

(i) If a compliance test demonstrates a source emitted lead compounds at 1.0

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milligram of lead per dry standard cubic meter (0.00044 grains of lead per dry standard cubic foot) or less during the time of the compliance test, the owner or operator of a secondary lead smelter shall be allowed up to 24 cal-

endar months from the previous compliance test to conduct the next annual compliance test for lead compounds.

(j) The standards for process sources are summarized in table 2.

TABLE 2.—SUMMARY OF STANDARDS FOR PROCESS SOURCES

Furnace configuration	Lead compounds (milligrams per dry standard cubic meter)	Total hydrocarbons	Citation
Collocated blast furnace and reverberatory furnace:			
When both furnaces operating ..	2.0	20 parts per million by volume ¹	§ 63.543(a),(c).
When reverberatory furnace not operating.	2.0	360 parts per million by volume ¹ (existing).	§ 63.543(a),(c)(1).
.....	.....	70 parts per million by volume ¹ (new) ² .	§ 63.543(a),(c)(2).
Blast	2.0	360 parts per million by volume ¹ (existing).	§ 63.543(a),(d).
.....	.....	70 parts per million by volume ¹ (new) ² .	§ 63.543(e).
.....	.....	0.20 kilograms per hour ³	§ 63.543(g).
Reverberatory, rotary, and electric ...	2.0	Not applicable	§ 63.543(a).

¹ Total hydrocarbons emission limits are as propane at 4 percent carbon dioxide to correct for dilution, based on a 3-hour average.

² New sources include those furnaces that commence construction or reconstruction after June 9, 1994.

³ Applicable to blast furnace charging process fugitive emissions that are not combined with the blast furnace process emissions prior to the point at which compliance with the total hydrocarbons concentration standard is determined.

§ 63.544 Standards for process fugitive sources.

(a) Each owner or operator of a secondary lead smelter shall control the process fugitive emission sources listed in paragraphs (a)(1) through (a)(6) of this section in accordance with the equipment and operational standards presented in paragraphs (b) and (c) of this section.

(1) Smelting furnace and dryer charging hoppers, chutes, and skip hoists;

(2) Smelting furnace lead taps, and molds during tapping;

(3) Smelting furnace slag taps, and molds during tapping;

(4) Refining kettles;

(5) Dryer transition pieces; and

(6) Agglomerating furnace product taps.

(b) Process fugitive emission sources shall be equipped with an enclosure hood meeting the requirements of paragraphs (b)(1), (b)(2), or (b)(3) of this section, or be located in a total enclosure subject to general ventilation that maintains the building at a lower than ambient pressure to ensure in-draft through any doorway opening.

(1) All process fugitive enclosure hoods except those specified for refining kettles and dryer transition pieces shall be ventilated to maintain a face velocity of at least 90 meters per minute (300 feet per minute) at all hood openings.

(2) Process fugitive enclosure hoods required for refining kettles in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 75 meters per minute (250 feet per minute).

(3) Process fugitive enclosure hoods required over dryer transition pieces in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 110 meters per minute (350 feet per minute).

(c) Ventilation air from all enclosures hoods and total enclosures shall be conveyed to a control device. Gases discharged to the atmosphere from these control devices shall not contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(d) All dryer emission vents and agglomerating furnace emission vents

shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

(e) Except as provided in paragraph (f) of this section, following the date of the initial test to demonstrate compliance with paragraphs (c) and (d) of this section, the owner or operator of a secondary lead smelter shall conduct a compliance test for lead compounds on an annual basis (no later than 12 cal-

endar months following the previous compliance test).

(f) If a compliance test demonstrates a source emitted lead compounds at 1.0 milligram of lead per dry standard cubic meter (0.00044 grains of lead per dry standard cubic foot) or less during the time of the compliance test, the owner or operator of a secondary lead smelter shall be allowed up to 24 calendar months from the previous compliance test to conduct the next annual compliance test for lead compounds.

(g) The standards for process fugitive sources are summarized in table 3.

TABLE 3.—SUMMARY OF STANDARDS FOR PROCESS FUGITIVE SOURCES

Fugitive emission source	Control device lead compound emission limit (milligrams per dry standard cubic meter)	Enclosed hood or doorway face velocity (meters/minute)	Citation
Control Option I			
Smelting furnace and dryer charging hoppers, chutes, and skip hoists.	2.0	¹ 90	§ 63.544 (b), (c).
Smelting furnace lead taps and molds during tapping.	2.0	¹ 90	§ 63.544 (b), (c).
Smelting furnace slag taps and molds during tapping.	2.0	¹ 90	§ 63.544 (b), (c).
Refining kettles	2.0	¹ 75	§ 63.544 (b), (c).
Dryer transition pieces	2.0	¹ 110	§ 63.544 (b), (c).
Agglomerating furnace process vents and product taps.	2.0	¹ 90	§ 63.544 (b), (c).
Control Option II			
Enclosed building ventilated to a control device	2.0	.....	§ 63.544 (b), (c).
Applicable to Both Control Options			
Dryer and agglomerating furnace emission vents ...	2.0	.....	§ 63.544(d).

¹ Enclosure hood face velocity applicable to those process fugitive sources not located in an enclosed building ventilated to a control device.

§ 63.545 Standards for fugitive dust sources.

(a) Each owner or operator of a secondary lead smelter shall prepare and at all times operate according to a standard operating procedures manual that describes in detail the measures that will be put in place to control fugitive dust emission sources within the areas of the secondary lead smelter listed in paragraphs (a)(1) through (a)(5) of this section.

- (1) Plant roadways;
- (2) Battery breaking area;
- (3) Furnace area;
- (4) Refining and casting area; and
- (5) Materials storage and handling area.

(b) The standard operating procedures manual shall be submitted to the Administrator or delegated authority for review and approval.

(c) The controls specified in the standard operating procedures manual shall at a minimum include the requirements of paragraphs (c)(1) through (c)(5) of this section.

(1) Plant roadways—paving of all areas subject to vehicle traffic and pavement cleaning twice per day of those areas, except on days when natural precipitation makes cleaning unnecessary or when sand or a similar material has been spread on plant roadways to provide traction on ice or snow.

(2) Battery breaking area—partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, and pavement cleaning twice per day; or total enclosure of the battery breaking area.

(3) Furnace area—partial enclosure and pavement cleaning twice per day; or total enclosure and ventilation of the enclosure to a control device.

(4) Refining and casting area—partial enclosure and pavement cleaning twice per day; or total enclosure and ventilation of the enclosure to a control device.

(5) Materials storage and handling area—partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, vehicle wash at each exit from the area, and paving of the area; or total enclosure of the area and ventilation of the enclosure to a control device, and a vehicle wash at each exit.

(d) The standard operating procedures manual shall require that daily records be maintained of all wet suppression, pavement cleaning, and vehicle washing activities performed to control fugitive dust emissions.

(e) No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any building or enclosure ventilation system any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot).

§ 63.546 Compliance dates.

(a) Each owner or operator of an existing secondary lead smelter shall achieve compliance with the requirements of this subpart no later than December 23, 1997.

(b) Each owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall achieve compliance with the requirements of this subpart by June 13, 1997 or upon startup of operations, whichever is later.

§ 63.547 Test methods.

(a) The following test methods in appendix A of part 60 listed in paragraphs

(a)(1) through (a)(5) of this section shall be used to determine compliance with the emission standards for lead compounds under §§ 63.543(a), 63.544 (c), and (d), and 63.545(e):

(1) Method 1 shall be used to select the sampling port location and the number of traverse points.

(2) Method 2 shall be used to measure volumetric flow rate.

(3) Method 3 shall be used for gas analysis to determine the dry molecular weight of the stack gas.

(4) Method 4 shall be used to determine moisture content of the stack gas.

(5) Method 12 shall be used to determine compliance with the lead compound emission standards. The minimum sample volume shall be 0.85 dry standard cubic meters (30 dry standard cubic feet) and the minimum sampling time shall be 60 minutes for each run. Three runs shall be performed and the average of the three runs shall be used to determine compliance.

(b) The following test methods in appendix A of part 60 listed in paragraphs (b)(1) through (b)(5) of this section shall be used, as specified, to determine compliance with the emission standards for total hydrocarbons under § 63.543 (c), (d), (e), and (g):

(1) Method 1 shall be used to select the sampling port location to determine compliance under § 63.543(c), (d), (e), and (g).

(2) Method 2 shall be used to measure volumetric flow rate to determine compliance under § 63.543(g).

(3) The Single Point Integrated Sampling and Analytical Procedure of Method 3B shall be used to measure the carbon dioxide content of the stack gases to determine compliance under § 63.543 (c), (d), and (e).

(4) Method 4 shall be used to measure moisture content of the stack gases to determine compliance under § 63.543 (c), (d), (e), and (g).

(5) Method 25A shall be used to measure total hydrocarbon emissions to determine compliance under § 63.543 (c), (d), (e), and (g). The minimum sampling time shall be 1 hour for each run. A minimum of three runs shall be performed. A 1-hour average total hydrocarbon concentration shall be determined for each run and the average of

the three 1-hour averages shall be used to determine compliance. The total hydrocarbon emissions concentrations for determining compliance under § 63.543(c), (d), and (e) shall be expressed as propane and shall be corrected to 4 percent carbon dioxide, as described in paragraph (c) of this section.

(c) For the purposes of determining compliance with the emission limits under § 63.543 (c), (d), and (e), the measured total hydrocarbon concentrations shall be corrected to 4 percent carbon dioxide as listed in paragraphs (c)(1) through (c)(2) of this section in the following manner:

(1) If the measured percent carbon dioxide is greater than 0.4 percent in each compliance test, the correction factor shall be determined by using equation (1).

$$F = \frac{4.0}{\text{CO}_2} \quad (1)$$

where:

F = correction factor (no units)

CO₂ = percent carbon dioxide measured using Method 3B, where the measured carbon dioxide is greater than 0.4 percent.

(2) If the measured percent carbon dioxide is equal to or less than 0.4 percent, then a correction factor (F) of 10 shall be used.

(3) The corrected total hydrocarbon concentration shall be determined by multiplying the measured total hydrocarbon concentration by the correction factor (F) determined for each compliance test.

(d) Compliance with the face velocity requirements under § 63.544(b) for process fugitive enclosure hoods shall be determined by the following test methods in paragraphs (d)(1) or (d)(2) of this section.

(1) Owners and operators shall calculate face velocity using the procedures in paragraphs (d)(1)(i) through (d)(1)(iv) of this section.

(i) Method 1 shall be used to select the sampling port location in the duct leading from the process fugitive enclosure hood to the control device.

(ii) Method 2 shall be used to measure the volumetric flow rate in the duct from the process fugitive enclosure hood to the control device.

(iii) The face area of the hood shall be determined from measurement of the hood. If the hood has access doors, then face area shall be determined with the access doors in the position they are in during normal operating conditions.

(iv) Face velocity shall be determined by dividing the volumetric flow rate determined in paragraph (d)(1)(ii) of this section by the total face area for the hood determined in paragraph (d)(1)(iii) of this section.

(2) The face velocity shall be measured directly using the procedures in paragraphs (d)(2)(i) through (d)(2)(v) of this section.

(i) A propeller anemometer or equivalent device shall be used to measure hood face velocity.

(ii) The propeller of the anemometer shall be made of a material of uniform density and shall be properly balanced to optimize performance.

(iii) The measurement range of the anemometer shall extend to at least 300 meters per minute (1,000 feet per minute).

(iv) A known relationship shall exist between the anemometer signal output and air velocity, and the anemometer must be equipped with a suitable read-out system.

(v) Hood face velocity shall be determined for each hood open during normal operation by placing the anemometer in the plane of the hood opening. Access doors shall be positioned consistent with normal operation.

(e) Owners and operators shall determine compliance with the doorway in-draft requirement for enclosed buildings in § 63.544(b) using the procedures in paragraphs (e)(1) or (e)(2) of this section.

(1)(i) Owners and operators shall use a propeller anemometer or equivalent device meeting the requirements of paragraphs (d)(2)(ii) through (d)(2)(iv) of this section.

(ii) Doorway in-draft shall be determined by placing the anemometer in the plane of the doorway opening near its center.

(iii) Doorway in-draft shall be demonstrated for each doorway that is open during normal operation with all remaining doorways in the position they are in during normal operation.

(2)(i) Owners and operators shall install a differential pressure gage on the leeward wall of the building to measure the pressure difference between the inside and outside of the building.

(ii) The pressure gage shall be certified by the manufacturer to be capable of measuring pressure differential in the range of 0.02 to 0.2 mm Hg.

(iii) Both the inside and outside taps shall be shielded to reduce the effects of wind.

(iv) Owners and operators shall demonstrate the inside of the building is maintained at a negative pressure as compared to the outside of the building of no less than 0.02 mm Hg when all doors are in the position they are in during normal operation.

§ 63.548 Monitoring requirements.

(a) Owners and operators of secondary lead smelters shall prepare, and at all times operate according to, a standard operating procedures manual that describes in detail procedures for inspection, maintenance, and bag leak detection and corrective action plans for all baghouses (fabric filters) that are used to control process, process fugitive, or fugitive dust emissions from any source subject to the lead emission standards in §§ 63.543, 63.544, and 63.545, including those used to control emissions from building ventilation. This provision shall not apply to process fugitive sources that are controlled by wet scrubbers.

(b) The standard operating procedures manual for baghouses required by paragraph (a) of this section shall be submitted to the Administrator or delegated authority for review and approval.

(c) The procedures specified in the standard operating procedures manual for inspections and routine maintenance shall, at a minimum, include the requirements of paragraphs (c)(1) through (c)(9) of this section.

(1) Daily monitoring of pressure drop across each baghouse cell.

(2) Weekly confirmation that dust is being removed from hoppers through visual inspection, or equivalent means of ensuring the proper functioning of removal mechanisms.

(3) Daily check of compressed air supply for pulse-jet baghouses.

(4) An appropriate methodology for monitoring cleaning cycles to ensure proper operation.

(5) Monthly check of bag cleaning mechanisms for proper functioning through visual inspection or equivalent means.

(6) Monthly check of bag tension on reverse air and shaker-type baghouses. Such checks are not required for shaker-type baghouses using self-tensioning (spring loaded) devices.

(7) Quarterly confirmation of the physical integrity of the baghouse through visual inspection of the baghouse interior for air leaks.

(8) Quarterly inspection of fans for wear, material buildup, and corrosion through visual inspection, vibration detectors, or equivalent means.

(9) Except as provided in paragraphs (g) and (h) of this section, continuous operation of a bag leak detection system.

(d) The procedures specified in the standard operating procedures manual for maintenance shall, at a minimum, include a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

(e) The bag leak detection system required by paragraph (a)(9) of this section, shall meet the specifications and requirements of paragraphs (e)(1) through (e)(8) of this section.

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligram per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings.

(3) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loadings is detected over a preset level.

(4) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications

and recommendations for installation, operation, and adjustment of the system.

(5) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(6) Following initial adjustment, the owner or operator shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the approved SOP required under paragraph (a) of this section. In no event shall the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.

(7) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector must be installed downstream of the baghouse and upstream of any wet acid gas scrubber.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(f) The standard operating procedures manual required by paragraph (a) of this section shall include a corrective action plan that specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan shall include, at a minimum, the procedures used to determine and record the time and cause of the alarm as well as the corrective actions taken to correct the control device malfunction or minimize emissions as specified in paragraphs (f)(1) and (f)(2) of this section.

(1) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(2) The cause of the alarm must be alleviated by taking the necessary corrective action(s) which may include, but not be limited to, paragraphs (f)(2)(i) through (f)(2)(vi) of this section.

(i) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

(g) Baghouses equipped with HEPA filters as a secondary filter used to control process, process fugitive, or fugitive dust emissions from any source subject to the lead emission standards in § 63.543, 63.544, or 63.545 are exempt from the requirement in § 63.548(c)(9) of this section to be equipped with a bag leak detector. The owner or operator of an affected source that uses a HEPA filter shall monitor and record the pressure drop across the HEPA filter system daily. If the pressure drop is outside the limit(s) specified by the filter manufacturer, the owner or operator must take appropriate corrective measures, which may include but not be limited to those given in paragraphs (g)(1) through (g)(4) of this section.

(1) Inspecting the filter and filter housing for air leaks and torn or broken filters.

(2) Replacing defective filter media, or otherwise repairing the control device.

(3) Sealing off a defective control device by routing air to other control devices.

(4) Shutting down the process producing the particulate emissions.

(h) Baghouses that are used exclusively for the control of fugitive dust emissions from any source subject to the lead emissions standard in § 63.545 are exempt from the requirement in § 63.548(c)(9) of this section to be equipped with a bag leak detector.

(i) The owner or operator of a secondary lead smelter that uses a wet scrubber to control particulate matter and metal hazardous air pollutant emissions from a process fugitive source shall monitor and record the pressure

drop and water flow rate of the wet scrubber during the initial test to demonstrate compliance with the lead emission limit under § 63.544(c) and (d). Thereafter, the owner or operator shall monitor and record the pressure drop and water flow rate at least once every hour and shall maintain the pressure drop and water flow rate no lower than 30 percent below the pressure drop and water flow rate measured during the initial compliance test.

(j) The owner or operator of a blast furnace or collocated blast furnace and reverberatory furnace subject to the total hydrocarbon standards in § 63.543 (c), (d), or (e), must comply with the requirements of either paragraph (j)(1) or (j)(2) of this section, to demonstrate continuous compliance with the total hydrocarbon emission standards.

(1) *Continuous Temperature Monitoring.* (i) The owner or operator of a blast furnace or a collocated blast furnace and reverberatory furnace subject to the total hydrocarbon emission standards in § 63.543 (c), (d), or (e) shall install, calibrate, maintain, and continuously operate a device to monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams consistent with the requirements for continuous monitoring systems in subpart A, General Provisions.

(ii) Prior to or in conjunction with the initial compliance test to determine compliance with § 63.543 (c), (d), or (e), the owner or operator shall conduct a performance evaluation for the temperature monitoring device according to § 63.8(e) of the General Provisions. The definitions, installation specifications, test procedures, and data reduction procedures for determining calibration drift, relative accuracy, and reporting described in Performance Specification 2, 40 CFR Part 60, Appendix B, Sections 2, 3, 5, 7, 8, 9, and 10 shall be used to conduct the evaluation. The temperature monitoring device shall meet the following performance and equipment specifications:

(A) The recorder response range must include zero and 1.5 times the average temperature identified in paragraph (j)(1)(iii) of this section.

(B) The monitoring system calibration drift shall not exceed 2 percent of

1.5 times the average temperature identified in paragraph (j)(1)(iii) of this section.

(C) The monitoring system relative accuracy shall not exceed 20 percent.

(D) The reference method shall be an National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or an alternate reference, subject to the approval of the Administrator.

(iii) The owner or operator of a blast furnace or a collocated blast furnace and reverberatory furnace subject to the total hydrocarbon emission standards shall monitor and record the temperature of the afterburner or the combined blast furnace and reverberatory furnace exhaust streams every 15 minutes during the total hydrocarbon compliance test and determine an arithmetic average for the recorded temperature measurements.

(iv) To remain in compliance with the standards for total hydrocarbons, the owner or operator must maintain an afterburner or combined exhaust temperature such that the average temperature in any 3-hour period does not fall more than 28 °C (50 °F) below the average established in paragraph (j)(1)(iii) of this section. An average temperature in any 3-hour period that falls more than 28 °C (50 °F) below the average established in paragraph (j)(1)(iii) of this section, shall constitute a violation of the applicable emission standard for total hydrocarbons under § 63.543 (c), (d), or (e).

(2) *Continuous Monitoring of Total Hydrocarbon Emissions.* (i) The owner or operator of a secondary lead smelter shall install, operate, and maintain a total hydrocarbon continuous monitoring system and comply with all of the requirements for continuous monitoring systems found in subpart A, General Provisions.

(ii) Prior to or in conjunction with the initial compliance test to determine compliance with § 63.543 (c), (d), or (e), the owner or operator shall conduct a performance evaluation for the total hydrocarbon continuous monitoring system according to § 63.8(e) of the General Provisions. The monitor shall meet the performance specifications of Performance Specification 8, 40 CFR Part 60, Appendix B.

(iii) Allowing the 3-hour average total hydrocarbon concentration to exceed the applicable total hydrocarbon emission limit under §63.543 shall constitute a violation of the applicable emission standard for total hydrocarbons under §63.543 (c), (d), or (e).

§63.549 Notification requirements.

(a) The owner or operator of a secondary lead smelter shall comply with all of the notification requirements of §63.9 of subpart A, General Provisions.

(b) The owner or operator of a secondary lead smelter shall submit the fugitive dust control standard operating procedures manual required under §63.545(a) and the standard operating procedures manual for baghouses required under §63.548(a) to the Administrator or delegated authority along with a notification that the smelter is seeking review and approval of these plans and procedures. Owners or operators of existing secondary lead smelters shall submit this notification no later than July 23, 1997. The owner or operator of a secondary lead smelter that commences construction or reconstruction after June 9, 1994, shall submit this notification no later than 180 days before startup of the constructed or reconstructed secondary lead smelter, but no sooner than June 13, 1997. An affected source that has received a construction permit from the Administrator or delegated authority on or before June 23, 1995, shall submit this notification no later than July 23, 1997.

§63.550 Recordkeeping and reporting requirements.

(a) The owner or operator of a secondary lead smelter shall comply with all of the recordkeeping requirements under §63.10 of the General Provisions. In addition, each owner or operator of a secondary lead smelter shall maintain for a period of 5 years, records of the information listed in paragraphs (a)(1) through (a)(6) of this section.

(1) An identification of the date and time of all bag leak detection system alarms, their cause, and an explanation of the corrective actions taken.

(2) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standards under §63.543 (c), (d), or (e)

by employing the method allowed in §63.548(j)(1), the records shall include the output from the continuous temperature monitor, an identification of periods when the 3-hour average temperature fell below the minimum established under §63.548(j)(1), and an explanation of the corrective actions taken.

(3) If an owner or operator chooses to demonstrate continuous compliance with the total hydrocarbon emission standard under §63.543 (c), (d), or (e) by employing the method allowed in §63.548(j)(2), the records shall include the output from the total hydrocarbon continuous monitoring system, an identification of the periods when the 3-hour average total hydrocarbon concentration exceeded the applicable standard and an explanation of the corrective actions taken.

(4) Any recordkeeping required as part of the practices described in the standard operating procedures manual required under §63.545(a) for the control of fugitive dust emissions.

(5) Any recordkeeping required as part of the practices described in the standard operating procedures manual for baghouses required under §63.548(a).

(6) Records of the pressure drop and water flow rate for wet scrubbers used to control metal hazardous air pollutant emissions from process fugitive sources.

(b) The owner or operator of a secondary lead smelter shall comply with all of the reporting requirements under §63.10 of the General Provisions. The submittal of reports shall be no less frequent than specified under §63.10(e)(3) of the General Provisions. Once a source reports a violation of the standard or excess emissions, the source shall follow the reporting format required under §63.10(e)(3) until a request to reduce reporting frequency is approved.

(c) In addition to the information required under §63.10 of the General Provisions, reports required under paragraph (b) of this section shall include the information specified in paragraphs (c)(1) through (c)(6) of this section.

(1) The reports shall include records of all alarms from the bag leak detection system specified in §63.548(e).

(2) The reports shall include a description of the procedures taken following each bag leak detection system alarm pursuant to § 63.548(f) (1) and (2).

(3) The reports shall include the information specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section, consistent with the monitoring option selected under § 63.548(h).

(i) A record of the temperature monitor output, in 3-hour block averages, for those periods when the temperature monitored pursuant to § 63.548(j)(1) fell below the level established in § 63.548(j)(1).

(ii) A record of the total hydrocarbon concentration, in 3-hour block averages, for those periods when the total hydrocarbon concentration being monitored pursuant to § 63.548(j)(2) exceeds the relevant limits established in § 63.543 (c), (d), and (e).

(4) The reports shall contain a summary of the records maintained as part of the practices described in the standard operating procedures manual for baghouses required under § 63.548(a), including an explanation of the periods when the procedures were not followed and the corrective actions taken.

(5) The reports shall contain an identification of the periods when the pressure drop and water flow rate of wet scrubbers used to control process fugitive sources dropped below the levels established in § 63.548(i), and an explanation of the corrective actions taken.

(6) The reports shall contain a summary of the fugitive dust control measures performed during the required reporting period, including an explanation of the periods when the procedures outlined in the standard operating procedures manual pursuant to § 63.545(a) were not followed and the corrective actions taken. The reports shall not contain copies of the daily records required to demonstrate compliance with the requirements of the standard operating procedures manuals required under §§ 63.545(a) and 63.548(a).

Subpart Y—National Emission Standards for Marine Tank Vessel Loading Operations

SOURCE: 61 FR 48399, Sept. 19, 1995, unless otherwise noted.

§ 63.560 Applicability and designation of affected source.

(a) *Maximum achievable control technology (MACT) standards.* (1) The provisions of this subpart pertaining to the MACT standards in § 63.562(b) and (d) of this subpart are applicable to existing and new sources with emissions of 10 or 25 tons, as that term is defined in § 63.561, except as specified in paragraph (d) of this section, and are applicable to new sources with emissions less than 10 and 25 tons, as that term is defined in § 63.561, except as specified in paragraph (d) of this section.

(2) Existing sources with emissions less than 10 and 25 tons are not subject to the emissions standards in § 63.562(b) and (d).

(3) The recordkeeping requirements of § 63.567(j)(4) and the emission estimation requirements of § 63.565(l) apply to existing sources with emissions less than 10 and 25 tons.

(b) *Reasonably available control technology (RACT) standards.* (1) The provisions of this subpart pertaining to RACT standards in § 63.562(c) and (d) of this subpart are applicable to sources with throughput of 10 M barrels or 200 M barrels, as that term is defined in § 63.561, except as specified in paragraph (d) of this section.

(2) Sources with throughput less than 10 M barrels and 200 M barrels, as that term is defined in § 63.561, are not subject to the emissions standards in § 63.562(c) and (d).

(c) *General Provisions applicability.* Owners or operators of affected sources, as that term is defined in § 63.561, of this subpart must comply with the requirements of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of this section.

(d) *Exemptions from MACT and RACT standards.* (1) This subpart does not apply to emissions resulting from marine tank vessel loading operations, as that term is defined in § 63.561, of commodities with vapor pressures less than 10.3 kilopascals (kPa) (1.5 pounds per square inch, absolute) (psia) at standard conditions, 20°C and 760 millimeters Hg (mm Hg).

(2) The provisions of this subpart pertaining to the MACT standards in § 63.562(b)(2), (3) and (4) and to the

RACT standards in § 63.562(c)(3) and (4) do not apply to marine tank vessel loading operations where emissions are reduced by using a vapor balancing system, as that term is defined in § 63.561. The provisions pertaining to the vapor collection system, ship-to-shore compatibility, and vapor tightness of marine tank vessels in § 63.562(b)(1) and (c)(2) do apply.

(3) The provisions of this subpart pertaining to the MACT standards in § 63.562(b)(2), (3), and (4) do not apply to marine tank vessel loading operations that are contiguous with refinery operations at sources subject to and complying with subpart CC of this part, National Emissions Standards for Organic Hazardous Air Pollutants from Petroleum Refineries, except to the extent that any such provisions of this subpart are made applicable by subpart CC of this part.

(4) The provisions of this subpart pertaining to the MACT standards in § 63.562(b) and (d) do not apply to benzene emissions from marine tank vessel loading operations that are subject to and complying with 40 CFR part 61, subpart BB, National Emissions Standards for Benzene Emissions from Benzene Transfer Operations, except that benzene emissions or other HAP emissions (i.e., nonbenzene HAP emissions) from marine tank vessel loading operations that are not subject to subpart BB are subject to the provisions of this subpart.

(5) The provisions of this subpart pertaining to the MACT standards in § 63.562(b) and (d) do not apply to marine tank vessel loading operations at loading berths that only transfer liquids containing organic HAP as impurities, as that term is defined in § 63.561.

(6) The provisions of this subpart do not apply to marine tank vessel loading operations at existing offshore loading terminals, as that term is defined in § 63.561.

(7) The provisions of this subpart do not apply to ballasting operations, as that term is defined in § 63.561.

(e) *Compliance dates—(1) MACT standards compliance dates, except the Valdez Marine Terminal (VMT) source.* (i) A new or existing source with emissions of 10 or 25 tons, except the VMT source, and

a new source with emissions less than 10 and 25 tons, except the VMT source, that has an initial startup date on or before September 20, 1999 shall comply with the provisions of this subpart pertaining to the MACT standards in § 63.562(b) no later than 4 years after the effective date.

(ii) A new source with emissions of 10 or 25 tons, except the VMT source, and a new source with emissions less than 10 and 25 tons, except the VMT source, that has an initial startup date after September 20, 1999 shall comply with provisions of this subpart pertaining to the MACT standards in § 63.562(b) immediately upon startup.

(iii) A source with emissions less than 10 and 25 tons that increases its emissions subsequent to September 20, 1999 such that it becomes a source with emissions of 10 or 25 tons shall comply with the provisions of this subpart pertaining to the MACT standards in § 63.562(b) within 3 years following the exceedance of the threshold level.

(2) *RACT standards compliance dates, except the VMT source.* (i) A source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date on or before September 21, 1998 shall comply with § 63.562(c)(1) no later than 2 years after the effective date.

(ii) A source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date on or before September 21, 1998 shall comply with the provisions of this subpart pertaining to the RACT standards in § 63.562(c) other than § 63.562(c)(1), no later than 3 years after the effective date.

(iii) A source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date after September 21, 1998 shall comply with the provisions of this subpart pertaining to the RACT standards in § 63.562(c) immediately upon startup.

(iv) A source with throughput less than 10 M barrels and 200 M barrels that increases its throughput subsequent to September 21, 1998 such that it becomes a source with throughput of 10 M barrels or 200 M barrels shall comply with the provisions of this subpart pertaining to the RACT standards in

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§63.562(c) within 3 years following the exceedance of the threshold levels.

(v) A source with throughput of 10 M barrels or 200 M barrels may apply for approval from the Administrator for an extension of the compliance date of up to 1 year if it can demonstrate that the additional time is necessary for installation of the control device.

(3) *MACT and RACT compliance dates for the VMT source.* The VMT source, as that term is defined in §63.561, shall comply with the provisions of this subpart pertaining to the MACT and RACT standards in §63.562(d) no later than 30 months after the effective date.

TABLE 1 OF § 63.560.—*General Provisions Applicable to Subpart Y*

Reference	Applies to affected sources in subpart Y	Comment
63.1(a)(1)	Yes	Additional terms are defined in § 63.561; when overlap between subparts A and Y occurs, subpart Y takes precedence.
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	Subpart Y clarifies the applicability of each paragraph in subpart A to sources subject to subpart Y in this table.
63.1(a)(6)	Yes	
63.1(a)(7)	Yes	
63.1(a)(8)	Yes	
63.1(a)(9)	No	Reserved.
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	§ 63.567(a) also allows report submissions via facsimile and on electronic media.
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	Yes	§ 63.560 specifies applicability. Subpart Y clarifies the applicability of each paragraph in subpart A to sources subject to subpart Y in this table.
63.1(b)(2)	Yes	
63.1(b)(3)	No	
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Subpart Y is not applicable to area sources.
63.1(c)(3)	No	
63.1(c)(4)	Yes	Reserved.
63.1(c)(5)	No	
63.1(d)	No	§ 63.560 specifies applicability.
63.1(e)	No	
63.2	Yes	Additional terms are defined in § 63.561; when overlap between subparts A and Y occurs, subpart Y takes precedence.
63.3	Yes	
63.4(a)(1)	Yes	
63.4(a)(2)	Yes	
63.4(a)(3)	Yes	Reserved.
63.4(a)(4)	No	
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	Reserved.
63.5(a)	Yes	
63.5(b)(1)(i)	Yes	
63.5(b)(1)(ii)	No	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)–(5)	No	
63.5(b)(6)	Yes	

63.5(c)	No	Reserved.
63.5(d)(1)(i)	No	See § 63.566(b)(2).
63.5(d)(1)(ii)(A)(H)	Yes	Reserved.
63.5(d)(1)(ii)(i)	No	
63.5(d)(1)(ii)(j)	Yes	
63.5(d)(1)(iii)	Yes	
63.5(d)(2)-(4)	Yes	
63.5(e)	Yes	
63.5(f)(1)(i) and (ii)	No	See § 63.566(c).
63.5(f)(1)(iii) and (iv)	No	
63.5(f)(2)	No	
63.6(a)(1)	Yes	§ 63.560 specifies applicability.
63.6(a)(2)	No	§ 63.560(e) specifies compliance dates for sources.
63.6(b)(1)-(5)	No	Reserved.
63.6(b)(6)	No	§ 63.560(e) specifies compliance dates for sources.
63.6(b)(7)	No	§ 63.560(e) specifies compliance dates for sources.
63.6(c)(1)	No	
63.6(c)(2)	No	
63.6(c)(3)-(4)	No	Reserved.
63.6(c)(5)	No	§ 63.560(e) specifies compliance dates for sources.
63.6(d)	No	Reserved.
63.6(e)	No	See § 63.562(e).
63.6(f)(1)	Yes	
63.6(f)(2)(i)	Yes	
63.6(f)(2)(ii)	No	
63.6(f)(2)(iii)	Yes	
63.6(f)(2)(iv)	Yes	
63.6(f)(2)(v)	No	See § 63.562(e)(1).
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h)	No	No opacity monitoring is required under subpart Y.
63.6(i)(1)-(3)	Yes	
63.6(i)(4)(i)(A)	No	
63.6(i)(4)(i)(B)	Yes	
63.6(i)(4)(ii)	No	
63.6(i)(5)-(12)	Yes	
63.6(i)(13)	No	
63.6(i)(14)	Yes	
63.6(i)(15)	No	Reserved.
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)(i)-(v)	No	See § 63.563(b)(1).
63.7(a)(2)(v)	Yes	
63.7(a)(2)(vi)	No	
63.7(a)(2)(vii)-(viii)	No	Reserved.
63.7(a)(2)(ix)	No	
63.7(a)(3)	Yes	
63.7(b)	Yes	
63.7(c)(1)-(2)	Yes	The site-specific test plan must be submitted only if requested by the Administrator.

TABLE 1 OF § 63.560.—General Provisions Applicable to Subpart Y—Continued

Reference	Applies to affected sources in subpart Y	Comment
63.7(c)(3)(i)—(ii)(A)	Yes	
63.7(c)(3)(ii)(B)	No	See § 63.565(m)(2).
63.7(c)(3)(iii)	Yes	
63.7(c)(4)	Yes	
63.7(d)	Yes	
63.7(e)	Yes	
63.7(f)	Yes	
63.7(g)(1)	Yes	
63.7(g)(2)	No	Reserved.
63.7(g)(3)	Yes	
63.7(h)	Yes	
63.8(a)(1)—(2)	Yes	
63.8(a)(3)	No	Reserved.
63.8(a)(4)	Yes	
63.8(b)(1)	Yes	
63.8(b)(2)	No	
63.8(b)(3)	Yes	
63.8(c)(1)(i)	Yes	
63.8(c)(1)(ii)	No	
63.8(c)(1)(iii)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	No	See § 63.564(a)(3).
63.8(c)(5)	No	See also performance specifications for continuous monitoring systems § 63.564(a)(4).
63.8(c)(6)	Yes	See also § 63.564(a)(5).
63.8(c)(7)(i)(A)—(B)	Yes	
63.8(c)(7)(i)(C)	No	
63.8(c)(7)(ii)	Yes	
63.8(c)(8)	No	See § 63.564(a)(5).
63.8(d)	No	See § 63.562(e)(2)(iv).
63.8(e)(1)—(4)	Yes	
63.8(e)(5)(i)	Yes	
63.8(e)(5)(ii)	No	
63.8(f)(1)	Yes	
63.8(f)(2)(i)—(vii)	Yes	
63.8(f)(2)(viii)	No	
63.8(f)(2)(ix)	Yes	
63.8(f)(3)—(6)	Yes	
63.8(g)	Yes	
63.9(a)(1)	Yes	
63.9(a)(2)	Yes	
63.9(a)(3)	Yes	
63.9(a)(4)	Yes	
63.9(b)(1)(i)	Yes	

63.9(b)(1)(ii)	No	See § 63.567(b)(1)
63.9(b)(1)(iii)	Yes	
63.9(b)(2)	No	See § 63.567(b)(2).
63.9(b)(3)	No	See § 63.567(b)(3).
63.9(b)(4)	No	See § 63.567(b)(4).
63.9(b)(5)	No	See § 63.567(b)(4).
63.9(c)	No	See § 63.567(c).
63.9(d)	No	
63.9(e)	Yes	
63.9(f)	No	
63.9(g)(1)	Yes	
63.9(g)(2)	No	
63.9(g)(3)	Yes	
63.9(h)(1)-(3)	Yes	
63.9(h)(4)	No	Reserved.
63.9(h)(5)-(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)(1)	Yes	
63.10(b)(2)(i)	No	
63.10(b)(2)(ii)-(iii)	Yes	
63.10(b)(2)(iv)	No	
63.10(b)(2)(v)	No	
63.10(b)(2)(vi)-(xiv)	Yes	
63.10(b)(3)	No	See § 63.567(i)(4).
63.10(c)(1)	Yes	Reserved.
63.10(c)(2)-(4)	No	
63.10(c)(5)	Yes	
63.10(c)(6)	No	See § 63.564(a)(5).
63.10(c)(7)	No	
63.10(c)(8)	Yes	
63.10(c)(9)	No	Reserved.
63.10(c)(10)-(13)	Yes	
63.10(c)(14)	No	See § 63.562(d)(2)(iv).
63.10(c)(15)	No	
63.10(d)(1)-(2)	Yes	
63.10(d)(3)	No	See § 63.567(d).
63.10(d)(4)	Yes	
63.10(d)(5)	No	
63.10(d)(6)	Yes	
63.10(e)(1)	Yes	
63.10(e)(2)(i)	Yes	
63.10(e)(2)(ii)	No	
63.10(e)(3)(i)-(v)	No	See § 63.567(e)
63.10(e)(3)(vi)	Yes	
63.10(e)(3)(vii)-(viii)	No	See § 63.567(e)
63.10(e)(4)	No	
63.10(f)	Yes	
63.11	Yes	
63.12-63.15	Yes	

§ 63.561 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act or in subpart A of this part.

Affected source means a source with emissions of 10 or 25 tons, a new source with emissions less than 10 and 25 tons, a new major source offshore loading terminal, a source with throughput of 10 M barrels or 200 M barrels, or the VMT source, that is subject to the emissions standards in § 63.562.

Air pollution control device or *control device* means a combustion device or vapor recovery device.

Ballasting operations means the introduction of ballast water into a cargo tank of a tankship or oceangoing barge.

Baseline operating parameter means a minimum or maximum value of a process parameter, established for a control device during a performance test where the control device is meeting the required emissions reduction or established as the manufacturer recommended operating parameter, that, if achieved by itself or in combination with one or more other operating parameters, determines if a control device is operating properly.

Boiler means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system.

Car-seal means a seal that is placed on a device used to change the position of a valve (e.g., from open to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Combustion device means all equipment, including, but not limited to, thermal incinerators, catalytic incinerators, flares, boilers, and process heaters used for combustion or destruction of organic vapors.

Commenced means, with respect to construction of an air pollution control device, that an owner or operator has undertaken a continuous program of construction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction.

Commodity means a distinct product that a source loads onto marine tank vessels.

Continuous means, with respect to monitoring, reading and recording (either in hard copy or computer readable form) of data values measured at least once every 15 minutes.

Crude oil means a naturally occurring mixture consisting predominantly of hydrocarbons and/or sulfur, nitrogen, and oxygen derivatives of hydrocarbons that is removed from the earth in a liquid state or is capable of being so removed.

Exceedance or *Variance* means, with respect to parametric monitoring, the operating parameter of the air pollution control device that is monitored as an indication of proper operation of the control device is outside the acceptable range or limits for the baseline parameter given in § 63.563(b)(4) through (9).

Excess emissions means, with respect to emissions monitoring, the concentration of the outlet stream of the air pollution control device is outside the acceptable range or limits for the baseline concentration given in § 63.563(b)(4) through (9).

Flow indicator means a device that indicates whether gas flow is present in a line or vent system.

Gasoline means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kPa (4.0 psia) or greater, that is used as a fuel for internal combustion engines.

Impurity means HAP substances that are present in a commodity or that are produced in a process coincidentally with the primary product or commodity and that are 0.5 percent total HAP by weight or less. An impurity does not serve a useful purpose in the production or use of the primary product or commodity and is not isolated.

Leak means a reading of 10,000 parts per million volume (ppmv) or greater as methane that is determined using the test methods in Method 21, appendix A of part 60 of this chapter.

Lightering or *Lightering operation* means the offshore transfer of a bulk liquid cargo from one marine tank vessel to another vessel.

Loading berth means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill marine tank vessels. The loading berth includes those items necessary for an offshore loading terminal.

Loading cycle means the time period from the beginning of filling a single marine tank vessel until commodity flow to the marine tank vessel ceases.

Maintenance allowance means a period of time that an affected source is allowed to perform maintenance on the loading berth without controlling emissions from marine tank vessel loading operations.

Marine tank vessel loading operation means any operation under which a commodity is bulk loaded onto a marine tank vessel from a terminal, which may include the loading of multiple marine tank vessels during one loading operation. Marine tank vessel loading operations do not include refueling of marine tank vessels.

Marine vessel or Marine tank vessel means any tank ship or tank barge that transports liquid product such as gasoline or crude oil in bulk.

Nonvapor-tight means any marine tank vessel that does not pass the required vapor-tightness test.

Offshore loading terminal means a location that has at least one loading berth that is 0.81 km (0.5 miles) or more from the shore that is used for mooring a marine tank vessel and loading liquids from shore.

Primary fuel means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation of the device without the addition of other fuels.

Process heater means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that are heated to produce steam.

Recovery device means an individual unit of equipment, including, but not limited to, a carbon adsorber, condenser/refrigeration unit, or absorber that is capable of and used for the purpose of removing vapors and recovering liquids or chemicals.

Routine loading means, with respect to the VMT source, marine tank vessel

loading operations that occur as part of normal facility operation over a loading berth when no loading berths are inoperable due to maintenance.

Secondary fuel means any fuel other than the primary fuel. The secondary fuel provides supplementary heat in addition to the heat provided by the primary fuel and is generally fired through a burner other than the primary burner.

Source(s) means any location where at least one dock or loading berth is bulk loading onto marine tank vessels, except offshore drilling platforms and lightering operations.

Source(s) with emissions less than 10 and 25 tons means major source(s) having aggregate actual HAP emissions from marine tank vessel loading operations at all loading berths as follows:

(1) Prior to the compliance date, of less than 9.1 Mg (10 tons) of each individual HAP calculated on a 24-month annual average basis after September 19, 1997 and less than 22.7 Mg (25 tons) of all HAP combined calculated on a 24-month annual average basis after September 19, 1997, as determined by emission estimation in § 63.565(l) of this subpart; and

(2) After the compliance date, of less than 9.1 Mg (10 tons) of each individual HAP calculated annually after September 20, 1999 and less than 22.7 Mg (25 tons) of all HAP combined calculated annually after September 20, 1999, as determined by emission estimation in § 63.565(l) of this subpart.

Source(s) with emissions of 10 or 25 tons means major source(s) having aggregate actual HAP emissions from marine tank vessels loading operations at all loading berths as follows:

(1) Prior to the compliance date, emissions of 9.1 Mg (10 tons) or more of each individual HAP calculated on a 24-month annual average basis after September 19, 1997 or of 22.7 Mg (25 tons) or more of all HAP combined calculated on a 24-month annual average basis after September 19, 1997, as determined by emission estimation in § 63.565(l); or

(2) After the compliance date, emissions of 9.1 Mg (10 tons) or more of each individual HAP calculated annually after September 20, 1999 or of 22.7 Mg (25 tons) or more of all HAP combined calculated annually after September

20, 1999, as determined by emission estimation in § 63.565(l).

Source(s) with throughput less than 10 M barrels and 200 M barrels means source(s) having aggregate loading from marine tank vessel loading operations at all loading berths as follows:

(1) Prior to the compliance date, of less than 1.6 billion liters (10 million (M) barrels) of gasoline on a 24-month annual average basis and of less than 32 billion liters (200 M barrels) of crude oil on a 24-month annual average basis after September 19, 1996; and

(2) After the compliance date, of less than 1.6 billion liters (10 M barrels) of gasoline annually and of less than 32 billion liters (200 M barrels) of crude oil annually after September 21, 1998.

Source(s) with throughput of 10 M barrels or 200 M barrels means source(s) having aggregate loading from marine tank vessel loading operations at all loading berths as follows:

(1) Prior to the compliance date, of 1.6 billion liters (10 M barrels) or more of gasoline on a 24-month annual average basis or of 32 billion liters (200 M barrels) or more of crude oil on a 24-month annual average basis after September 19, 1996; or

(2) After the compliance date, of 1.6 billion liters (10 M barrels) or more of gasoline annually or of 32 billion liters (200 M barrels) or more of crude oil annually after September 21, 1998.

Terminal means all loading berths at any land or sea based structure(s) that loads liquids in bulk onto marine tank vessels.

Twenty-four-month (24-month) annual average basis means annual HAP emissions, with respect to MACT standards, or annual loading throughput, with respect to RACT standards, from marine tank vessel loading operations averaged over a 24-month period.

Valdez Marine Terminal (VMT) source means the major source that is permitted under the Trans-Alaska Pipeline Authorization Act (TAPAA) (43 U.S.C. § 1651 *et seq.*). The source is located in Valdez, Alaska in Prince William Sound.

Vapor balancing system means a vapor collection system or piping system that is designed to collect organic HAP vapors displaced from marine tank vessels during marine tank vessel loading

operations and that is designed to route the collected organic HAP vapors to the storage vessel from which the liquid being loaded originated or to compress collected organic HAP vapors and commingle with the raw feed of a process unit.

Vapor collection system means any equipment located at the source, i.e., at the terminal, that is not open to the atmosphere, that is composed of piping, connections, and flow inducing devices, and that is used for containing and transporting vapors displaced during the loading of marine tank vessels to a control device or for vapor balancing. This does not include the vapor collection system that is part of any marine vessel vapor collection manifold system.

Vapor-tight marine vessel means a marine tank vessel that has demonstrated within the preceding 12 months to have no leaks. A marine tank vessel loaded at less than atmospheric pressure is assumed to be vapor tight for the purpose of this standard.

Volatile organic compounds or *VOC* is as defined in 40 CFR 51.100(s) of this chapter.

§ 63.562 Standards.

(a) The emissions limitations in paragraphs (b), (c), and (d) of this section apply during marine tank vessel loading operations.

(b) *MACT standards, except for the VMT source*—(1)(i) *Vapor collection system of the terminal*. The owner or operator of a new source with emissions less than 10 and 25 tons and an existing or new source with emissions of 10 or 25 tons shall equip each terminal with a vapor collection system that is designed to collect HAP vapors displaced from marine tank vessels during marine tank vessel loading operations and to prevent HAP vapors collected at one loading berth from passing through another loading berth to the atmosphere, except for those commodities exempted under § 63.560(d).

(ii) *Ship-to-shore compatibility*. The owner or operator of a new source with emissions less than 10 and 25 tons and an existing or new source with emissions of 10 or 25 tons shall limit marine tank vessel loading operations to those vessels that are equipped with vapor

collection equipment that is compatible with the terminal's vapor collection system, except for those commodities exempted under § 63.560(d).

(iii) *Vapor tightness of marine vessels.* The owner or operator of a new source with emissions less than 10 and 25 tons and an existing or new source with emissions of 10 or 25 tons shall limit marine tank vessel loading operations to those vessels that are vapor tight and to those vessels that are connected to the vapor collection system, except for those commodities exempted under § 63.560(d).

(2) *MACT standards for existing sources with emissions of 10 or 25 tons.* The owner or operator of an existing source with emissions of 10 or 25 tons, except offshore loading terminals and the VMT source, shall reduce captured HAP emissions from marine tank vessel loading operations by 97 weight-percent, as determined using methods in § 63.565 (d) and (l).

(3) *MACT standards for new sources.* The owner or operator of a new source with emissions less than 10 and 25 tons or a new source with emissions of 10 or 25 tons, except offshore loading terminals and the VMT source, shall reduce HAP emissions from marine tank vessel loading operations by 98 weight-percent, as determined using methods in § 63.565 (d) and (l).

(4) *MACT standards for new major source offshore loading terminals.* The owner or operator of a new major source offshore loading terminal shall reduce HAP emissions from marine tank vessel loading operations by 95 weight-percent, as determined using methods in § 63.565 (d) and (l).

(5) *Prevention of carbon adsorber emissions during regeneration.* The owner or operator of a source subject to paragraph (b)(2), (3), or (4) shall prevent HAP emissions from escaping to the atmosphere from the regeneration of the carbon bed when using a carbon adsorber to control HAP emissions from marine tank vessel loading operations.

(6) *Maintenance allowance for loading berths.* The owner or operator of a source subject to paragraph (b)(2), (3) or (4), may apply for approval to the Administrator for a maintenance allowance for loading berths based on a

percent of annual throughput or annual marine tank vessel loading operation time for commodities not exempted in § 63.560(d). The owner or operator shall maintain records for all maintenance performed on the air pollution control equipment. The Administrator will consider the following in approving the maintenance allowance:

(i) The owner or operator expects to be in violation of the emissions standards due to maintenance;

(ii) Due to conditions beyond the reasonable control of the owner or operator, compliance with the emissions standards during maintenance would result in unreasonable economic hardship;

(iii) The economic hardship cannot be justified by the resulting air quality benefit;

(iv) The owner or operator has given due consideration to curtailing marine vessel loading operations during maintenance;

(v) During the maintenance allowance, the owner or operator will endeavor to reduce emissions from other loading berths that are controlled as well as from the loading berth the owner or operator is seeking the maintenance allowance; and

(vi) During the maintenance allowance, the owner or operator will monitor and report emissions from the loading berth to which the maintenance allowance applies.

(c) *RACT standards, except the VMT source—(1) Commencement of construction.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels, except the VMT source, with an initial startup date on or before September 21, 1998 shall provide the Agency no later than 2 years after the effective date with proof that it has commenced construction of its vapor collection system and air pollution control device.

(2)(i) *Vapor collection system of the terminal.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall equip each terminal with a vapor collection system that is designed to collect VOC vapors displaced from marine tank vessels during loading and to prevent VOC vapors collected at one loading berth from passing through another loading berth to

the atmosphere, except for those commodities exempted under § 63.560(d).

(ii) *Ship-to-shore compatibility.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall limit marine tank vessel loading operations to those vessels that are equipped with vapor collection equipment that is compatible with the terminal's vapor collection system, except for those commodities exempted under § 63.560(d).

(iii) *Vapor tightness of marine vessels.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall limit marine tank vessel loading operations to those vessels that are vapor-tight and to those vessels that are connected to the vapor collection system, except for those commodities exempted under § 63.560(d).

(3) *RACT standard for sources with throughput of 10 M or 200 M barrels, except the VMT source.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels, except the VMT source, shall reduce captured VOC emissions from marine tank vessel loading operations by 98 weight-percent when using a combustion device or reduce captured VOC emissions by 95 weight-percent when using a recovery device, as determined using methods in § 63.565(d) and (l).

(4) The owner or operator of a source with throughput of 10 M barrels or 200 M barrels, except the VMT source, may meet the requirements of paragraph (c)(3) by reducing gasoline loading emissions to, at most, 1,000 ppmv outlet VOC concentration.

(5) *Prevention of carbon adsorber emissions during regeneration.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels shall prevent HAP emissions from escaping to the atmosphere from the regeneration of the carbon bed when using a carbon adsorber to control HAP emissions from marine tank vessel loading operations.

(6) *Maintenance allowance for loading berths.* The owner or operator of a source with throughput of 10 M barrels or 200 M barrels may apply for approval to the Administrator for a maintenance allowance for loading berths based on a percent of annual through-

put or annual marine tank vessel loading operation time for commodities not exempted in § 63.560(d). The owner or operator shall maintain records for all maintenance performed on the air pollution control equipment. The Administrator will consider the following in approving the maintenance allowance:

(i) The owner or operator expects to be in violation of the emissions standards due to maintenance;

(ii) Due to conditions beyond the reasonable control of the owner or operator, compliance with the emissions standards during maintenance would result in unreasonable economic hardship;

(iii) The economic hardship cannot be justified by the resulting air quality benefit;

(iv) The owner or operator has given due consideration to curtailing marine vessel loading operations during maintenance;

(v) During the maintenance allowance, the owner or operator will endeavor to reduce emissions from other loading berths that are controlled as well as from the loading berth the owner or operator is seeking the maintenance allowance; and

(vi) During the maintenance allowance, the owner or operator will monitor and report emissions from the loading berth to which the maintenance allowance applies.

(d) *MACT and RACT standards for the VMT source—(1)(i) Vapor collection system of the terminal.* The owner or operator of the VMT source shall equip each terminal subject under paragraph (d)(2) with a vapor collection system that is designed to collect HAP vapors displaced from marine tank vessels during marine tank vessel loading operations and to prevent HAP vapors collected at one loading berth from passing through another loading berth to the atmosphere, except for those commodities exempted under § 63.560(d).

(ii) *Ship-to-shore compatibility.* The owner or operator of the VMT source shall limit marine tank vessel loading operations at berths subject under paragraph (d)(2) of this section to those vessels that are equipped with vapor

collection equipment that is compatible with the terminal's vapor collection system, except for those commodities exempted under § 63.560(d).

(iii) *Vapor tightness of marine vessels.* The owner or operator of the VMT source shall limit marine tank vessel loading operations at berths subject under paragraph (d)(2) of this section to those vessels that are vapor-tight and to those vessels that are connected to the vapor collection system, except for those commodities exempted under § 63.560(d).

(2) The owner or operator of the VMT source shall reduce captured HAP and VOC emissions by 98 weight-percent, as determined using methods in § 63.565(d) and (1) for loading berths subject under this paragraph according to paragraphs (d)(2)(i), (ii), (iii), and (iv):

(i) The owner or operator of the VMT source shall equip at least two loading berths and any additional berths indicated pursuant to paragraph (d)(2)(iii) with a vapor collection system and air pollution control device and shall load marine tank vessels over loading berths equipped with a vapor collection system and control device to the maximum extent practicable. The owner or operator shall equip all loading berths that will be used for routine loading after March 19, 1998 with a vapor collection system and control device if the annual average daily loading rate for all loading berths exceeds the limits in paragraphs (d)(2)(i)(A), (B), and (C) of this section.

(A) For 1995, 1,630,000 barrels per day; and

(B) For 1996, 1,546,000 barrels per day; and

(C) For 1997, 1,445,000 barrels per day.

(ii) Maximum extent practicable means that the total annual average daily loading over all loading berths not equipped with a vapor collection system and control device shall not exceed the totals in paragraphs (d)(2)(i)(A) and (B):

(A) *Loading allowances for marine tank vessel loading operations at loading berths not equipped with control devices.* The following maximum annual average daily loading rate for routine loading at loading berths not equipped with control devices in any of the following years shall not exceed:

(1) For 1998, 275,000 barrels per day;

(2) For 1999, 205,000 barrels per day;

(3) For 2000, 118,000 barrels per day;

(4) For 2001, 39,000 barrels per day; and

(5) For 2002 and subsequent years, no marine tank vessel loading operations shall be performed at berths not equipped with a vapor collection system and control device, except as allowed for maintenance under paragraph (B).

(B) *Maintenance allowances for loading berths subject under paragraph (d)(2)(i).* Beginning in the year 2000, the owner or operator of the VMT source may have a maximum of 40 calendar days per calendar year use of loading berths not equipped with a vapor collection system and control device, in accordance with the limits in paragraph (d)(2)(i)(B)(a), (b), or (c), to allow for maintenance of loading berths subject to paragraph (d)(2)(i). Beginning in the year 2002, the total annual average daily loading of crude oil over all loading berths not equipped with a vapor collection system and control device shall not exceed the amount stated in paragraph (d)(2)(i)(B)(b). The 40 days allowed for maintenance shall be converted into a compliance measure of annual average daily loading over the loading berths not equipped with a vapor collection system and control device as follows:

(1) If the total annual average daily volume of crude oil loaded at the facility was greater than or equal to 1,100,000 barrels per day in the prior calendar year, the maintenance allowance shall not exceed an annual average daily loading of 60,000 barrels per day.

(2) If the total annual average daily volume of crude oil loaded at the facility was less than 1,100,000 barrels per day and greater than or equal to 550,000 barrels per day in the prior calendar year, the maintenance allowance for the calendar year shall not exceed Q_m :

$$Q_m = \frac{(P - 550,000) \times 40}{365}$$

Where:

Q_m = maintenance allowance, barrels per day

P = prior calendar year's average daily volume of crude oil loaded at the facility, barrels per day.

(3) If the total annual average daily volume of crude oil loaded at the facility was less than 550,000 barrels per day in the prior calendar year, there shall be no maintenance allowance.

(iii) If the average daily loading rate for the loading berths not equipped with a vapor collection system and control device is greater than the combined amounts in any year listed in paragraphs (d)(2)(i)(A), (B), and (C) and (d)(2)(ii)(A) and (B), then the owner or operator of the VMT source shall equip all loading berths used for routine loading with a vapor collection system and control device within 2 years of the exceedance except that in an emergency situation the Administrator may, instead of requiring controls, approve an alternative plan to reduce loading over the unequipped berth(s) to a level which will ensure compliance with the applicable limit. Beginning in the year 2002, the owner or operator of the VMT source shall equip all uncontrolled loading berths used for marine tank vessel loading operations beyond the maintenance allowance in paragraph (d)(2)(ii)(B) with a vapor collection system and control device.

(iv) The owner or operator of the VMT source shall develop a program to communicate to relevant facility operations and marine transportation personnel and engage their active and consistent participation in honoring the intent and goal of minimizing loaded volumes over the unequipped berths and maximizing the loaded volumes at the berths equipped with a vapor collection system and control device to prevent exceedance of the load volume limits in paragraphs (d)(2)(ii)(A) and (B). This program is to be presented semi-annually during the first year of compliance and annually thereafter until the use of unequipped berths for routine loading is no longer required.

(3) The owner or operator of the VMT source shall submit annual reports on or before January 31 of each year to the Administrator certifying the annual average daily loading rate for the previous calendar year. Beginning on January 31, 1996, for the reported year 1995, the annual report shall specify the

annual average daily loading rate over all loading berths. Beginning on January 31, 1999, for the reported year 1998, the annual report shall specify the annual average daily loading rate over all loading berths, over each loading berth equipped with a vapor collection system and control device, and over each loading berth not equipped with a vapor collection system and control device. The annual average daily loading rate under this section is calculated as the total amount of crude oil loaded during the calendar year divided by 365 days or 366 days, as appropriate.

(e) *Operation and maintenance requirements for air pollution control equipment and monitoring equipment for affected sources.* At all times, including periods of startup, shutdown, and malfunction, owners or operators of affected sources shall operate and maintain a source, including associated air pollution control equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(1) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards by evaluating an owner or operator's conformance with operation and maintenance requirements.

(2) The owner or operator of an affected source shall develop and implement a written operation and maintenance plan that describes in detail a program of corrective action for varying (i.e., exceeding baseline parameters) air pollution control equipment and monitoring equipment, based on monitoring requirements in §63.564, used to comply with these emissions standards. The plan shall also identify all routine or otherwise predictable continuous monitoring system (thermocouples, pressure transducers, continuous emissions monitors (CEMS), etc.) variances.

(i) The plan shall specify procedures (preventive maintenance) to be followed to ensure that pollution control equipment and monitoring equipment functions properly and variances of the control equipment and monitoring equipment are minimal.

(ii) The plan shall identify all operating parameters to be monitored and recorded for the air pollution control device as indicators of proper operation and shall establish the frequency at which the parameters will be monitored (see § 63.564).

(iii) Owners or operators of affected sources shall incorporate a standardized inspection schedule for each component of the control device used to comply with the emissions standards in § 63.562(b), (c), and (d). To satisfy the requirements of this paragraph, the owner or operator may use the inspection schedule recommended by the vendor of the control system or any other technical publication regarding the operation of the control system.

(iv) Owners or operators shall develop and implement a continuous monitoring system (CMS) quality control program. The owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in § 63.8(e) of subpart A of this part. Each quality control program shall include, at a minimum, a written protocol that describes procedures for initial and any subsequent calibration of the CMS; determination and adjustment of the calibration drift of the CMS; preventive maintenance of the CMS, including spare parts inventory; data recording, calculations, and reporting; and accuracy audit procedures, including sampling and analysis methods. The owner or operation shall maintain records of the procedures that are part of the quality control program developed and implemented for CMS.

(3) Based on the results of the determination made under paragraph (e)(2), the Administrator may require that an owner or operator of an affected source make changes to the operation and maintenance plan for that source. Revisions may be required if the plan:

(i) Does not address a variance of the air pollution control equipment or monitoring equipment that has occurred that increases emissions;

(ii) Fails to provide for operation during a variance of the air pollution control equipment or the monitoring equipment in a manner consistent with safety and good air pollution control practices; or

(iii) Does not provide adequate procedures for correcting a variance of the air pollution control equipment or monitoring equipment as soon as reasonable.

(4) If the operation and maintenance plan fails to address or inadequately addresses a variance event at the time the plan was initially developed, the owner or operator shall revise the operation and maintenance plan within 45 working days after such an event occurs. The revised plan shall include procedures for operating and maintaining the air pollution control equipment or monitoring equipment during similar variance events and a program for corrective action for such events.

(5) The operation and maintenance plan shall be developed by the source's compliance date. The owner or operator shall keep the written operation and maintenance plan on record to be made available for inspection, upon request, by the Administrator for the life of the source. In addition, if the operation and maintenance plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the plan on record to be made available for inspection upon request by the Administrator for a period of 5 years after each revision to the plan.

(6) To satisfy the requirements of the operation and maintenance plan, the owner or operator may use the source's standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA) plan, or other existing plans provided the alternative plans meet the requirements of this section and are made available for inspection when requested by the Administrator.

§ 63.563 Compliance and performance testing.

(a) The following procedures shall be used to determine compliance with the

emissions limits under § 63.562(b)(1), (c)(2), and (d)(1):

(1) *Vent stream by-pass requirements for the terminal's vapor collection system.* (i) In accordance with § 63.562(b)(1)(i), (c)(2)(i), and (d)(1)(i), each valve in the terminal's vapor collection system that would route displaced vapors to the atmosphere, either directly or indirectly, shall be secured closed during marine tank vessel loading operations either by using a car-seal or a lock-and-key type configuration, or the by-pass line from the valve shall be equipped with a flow indicator, except for those valves used for pressure/vacuum relief, analyzers, instrumentation devices, sampling, and venting for maintenance. Marine tank vessel loading operations shall not be performed with open by-pass lines.

(ii) Repairs shall be made to valves, car-seals, or closure mechanisms no later than 15 days after a change in the position of the valve or a break in the car-seal or closure mechanism is detected or no later than prior to the next marine tank vessel loading operation, whichever is later.

(2) *Ship-to-shore compatibility of vapor collection systems.* Following the date on which the initial performance test is completed, marine tank vessel loading operations must be performed only if the marine tank vessel's vapor collection equipment is compatible to the terminal's vapor collection system; marine tank vessel loading operations must be performed only when the marine tank vessel's vapor collection equipment is connected to the terminal's vapor collection system, as required in § 63.562(b)(1)(ii), (c)(2)(ii), and (d)(1)(ii).

(3) *Pressure/vacuum settings for the marine tank vessel's vapor collection equipment.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator of an affected source shall demonstrate compliance with operating pressure requirements of 33 CFR 154.814 using the procedures in § 63.565(b).

(4) *Vapor-tightness requirements of the marine vessel.* The owner or operator of an affected source shall use the procedures in paragraph (a)(4)(i), (ii), (iii), or (iv) of this section to ensure that marine tank vessels are vapor tight, as re-

quired in § 63.562(b)(1)(iii), (c)(2)(iii), and (d)(1)(iii).

(i) *Pressure test documentation for determining vapor tightness of the marine vessel.* The owner or operator of a marine tank vessel, who loads commodities containing HAP not determined to be exempt under § 63.560(d) at an affected source, shall provide a copy of the vapor-tightness pressure test documentation described in § 63.567(i) for each marine tank vessel prior to loading. The date of the test listed in the documentation must be within the preceding 12 months, and the test must be conducted in accordance with the procedures in § 63.565(c)(1). Following the date on which the initial performance test is completed, the affected source must check vapor-tightness pressure test documentation for marine tank vessels loaded at positive pressure.

(ii) *Leak test documentation for determining vapor tightness of the marine vessel.* If no documentation of the vapor tightness pressure test as described in paragraph (a)(4)(i) of this section is available, the owner or operator of a marine tank vessel, who loads commodities containing HAP not determined to be exempt under § 63.560(d) at an affected source, shall provide the leak test documentation described in § 63.567(i) for each marine tank vessel prior to loading. The date of the test listed in the documentation must be within the preceding 12 months, and the test must be conducted in accordance with the procedures in § 63.565(c)(2). If the marine tank vessel has failed its most recent vapor-tightness leak test at that terminal, the owner or operator of the non-vapor-tight marine tank vessel shall provide documentation that the leaks detected during the previous vapor-tightness test have been repaired and documented with a successful vapor-tightness leak test described in § 63.565(c)(2) conducted during loading. If the owner or operator of the marine tank vessel can document that repair is technically infeasible without cleaning and gas freeing or dry-docking the vessel, the owner or operator of the affected source may load the marine tank vessel. Following the date on which the initial performance test is completed, an affected source must check the

vapor-tightness leak test documentation for marine tank vessels loaded at positive pressure.

(iii) *Leak test performed during loading using Method 21 for determining vapor tightness of the marine vessel.* If no documentation of vapor tightness as described in paragraphs (a)(4)(i) or (ii) of this section is available, the owner or operator of a marine tank vessel, who loads commodities containing HAP not determined to be exempt under § 63.560(d) at an affected source, shall perform a leak test of the marine tank vessel during marine tank vessel loading operation using the procedures described in § 63.565(c)(2).

(A) If no leak is detected, the owner or operator of a marine tank vessel shall complete the documentation described in § 63.567(i) prior to departure of the vessel.

(B) If a leak is detected, the owner or operator of the marine tank vessel shall document the vapor-tightness failure for the marine tank vessel prior to departure of the vessel. The leaking component shall be repaired prior to the next marine tank vessel loading operation at a controlled terminal unless the repair is technically infeasible without cleaning and gas freeing or dry-docking the vessel. If the owner or operator of the vessel provides documentation that repair of such equipment is technically infeasible without cleaning and gas freeing or dry-docking the vessel, the equipment responsible for the leak will be excluded from future Method 21 tests until repairs are effected. A copy of this documentation shall be maintained by the owner or operator of the affected source. Repair of the equipment responsible for the leak shall occur the next time the vessel is cleaned and gas freed or dry-docked. For repairs that are technically feasible without dry-docking the vessel, the owner or operator of the affected source shall not load the vessel again unless the marine tank vessel owner or operator can document that the equipment responsible for the leak has been repaired.

(iv) *Negative pressure loading.* The owner or operator of an affected source shall ensure that a marine tank vessel is loaded with the product tank below atmospheric pressure (i.e., at negative

gauge pressure). The pressure shall be measured between the facility's vapor connection and its manual isolation valve, and the measured pressure must be below atmospheric pressure. Following the date on which the initial performance test is completed, marine tank vessel loading operations for non-vapor-tight vessels must be performed below atmospheric pressure (i.e., at negative gauge pressure) in the product tank.

(b) *Compliance determination for affected sources.* The following procedures shall be used to determine compliance with the emissions limits under § 63.562(b), (c), and (d).

(1) *Initial performance test.* An initial performance test shall be conducted using the procedures listed in § 63.7 of subpart A of this part according to the applicability in Table 1 of § 63.560, the procedures listed in this section, and the test methods listed in § 63.565. The initial performance test shall be conducted within 180 days after the compliance date for the specific affected source. During this performance test, sources subject to MACT standards under § 63.562(b)(2), (3), (4), and (5) and (d)(2) shall determine the reduction of HAP emissions, as VOC, for all combustion or recovery devices other than flares. Sources subject to RACT standards under § 63.562(c)(3), (4), and (5) and (d)(2) shall determine the reduction of VOC emissions for all combustion or recovery devices other than flares.

(2) *Performance test exemptions.* An initial performance test required in this section and in § 63.565(d) and the continuous monitoring in § 63.564(e) is not required in the following cases:

(i) When a boiler or process heater with a design heat input capacity of 44 Megawatts or less is used to comply with § 63.562(b)(2), (3), or (4), (c)(3) or (4), or (d)(2) and the vent stream is used as the primary fuel or with the primary fuel;

(ii) When a boiler or process heater with a design heat input capacity of 44 Megawatts or greater is used to comply with § 63.562(b)(2), (3) or (4), (c)(3) or (4), or (d)(2); or

(iii) When a boiler subject to 40 CFR part 266, subpart H, "Hazardous Waste Burned in Industrial Furnaces," that

has demonstrated 99.99 percent destruction or recovery efficiency is used to comply with § 63.562(b)(2), (3), or (4), (c)(3) or (4), or (d)(2).

(3) *Operation and maintenance inspections.* If the 3-hour or 3-cycle block average operating parameters in paragraphs (b)(4) through (9) of this section, outside the acceptable operating ranges, are measured and recorded, i.e., variances of the pollution control device or monitoring equipment, the owner or operator of the affected source shall perform an unscheduled inspection of the control device and monitoring equipment and review of the parameter monitoring data. The owner or operator of the affected source shall perform an inspection and review when total parameter variance time for the control device is greater than 10 percent of the operating time for marine tank vessel loading operations on a 30-day, rolling-average basis. The inspection and review shall be conducted within 24 hours after passing the allowable variance time of 10 percent. The inspection checklist from the requirements of § 63.562(e)(2)(iii) and the monitoring data from requirements in §§ 63.562(e)(2)(ii) and 63.564 should be used to identify any maintenance problems that may be associated with the variance. The unscheduled inspection should encompass all components of the control device and monitoring equipment that can be inspected while in operation. If any maintenance problem is identified during the inspection, the owner or operator of the affected source must take corrective action (e.g., adjustments to operating controls, etc.) as soon as practicable. If no immediate maintenance problems are identified from the inspection performed while the equipment is operating, a complete inspection in accordance with § 63.562(e)(2) must be conducted prior to the next marine tank vessel loading operation and corrective action (e.g., replacement of defective parts) must be taken as soon as practicable for any maintenance problem identified during the complete inspection.

(4) *Combustion device, except flare.* During the initial performance test required in paragraph (b)(1) of this sec-

tion, the owner or operator shall determine the efficiency of and/or the outlet VOC concentration from the combustion device used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) using the test methods in § 63.565(d). The owner or operator shall comply with paragraph (b)(4)(i) or (ii) of this section.

(i) *Outlet VOC concentration limit for required percent combustion efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(e)(1) no more than 20 percent above the baseline VOC concentration.

(ii) *Baseline temperature for required percent combustion efficiency.* The owner or operator shall establish as an operating parameter the baseline temperature using the procedures described in § 63.565(f). Following the date on which the initial performance test is completed, the facility shall be operated with the block average temperature as determined in § 63.564(e)(2) or (3) no more than 28°C (50°F) below the baseline temperature.

(5) *Flare.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall establish that the flare used to comply with the emissions standards in § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) is in compliance with the design requirements for flares cited in § 63.565(e). Following the date on which the initial determination of compliance is established, the facility shall operate with the presence of a pilot flame in the flare, as determined in § 63.564(f).

(6) *Carbon adsorber.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of and/or the outlet VOC concentration from the recovery device used to comply with § 63.562(b)(2), (3), (4), and (5), (c)(3), (4), and (5), and (d)(2) using the test methods in § 63.565(d). The owner

or operator shall comply with paragraph (b)(6)(i) as well as either paragraph (b)(6)(ii) or (iii) of this section. The owner or operator of affected sources complying with paragraph (b)(6)(ii)(B) or (C) of this section shall conduct a performance test once each year.

(i) *Compliance determination for carbon bed regeneration.* Desorbed hydrocarbons from regeneration of the off-line carbon bed shall be vented to the on-line carbon bed.

(ii) *Baseline parameters for required percent recovery efficiency.* The owner or operator shall comply with paragraph (b)(6)(ii)(A), (B), or (C) of this section.

(A) *Outlet VOC concentration limit for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(g)(1) no more than 20 percent above the baseline VOC concentration.

(B) *Carbon adsorbers with vacuum regeneration.* The owner or operator shall establish as operating parameters the baseline regeneration time for the vacuum stage of carbon bed regeneration using the procedures described in § 63.565(h) and shall establish the baseline vacuum pressure (negative gauge pressure) using the procedures described in § 63.565(i). Following the date on which the initial performance test is completed, the facility shall be operated with block average regeneration time of the vacuum stage of carbon bed regeneration as determined in § 63.564(g)(2) no more than 20 percent below the baseline regeneration time, and the facility shall be operated with the block average vacuum pressure (negative gauge pressure) as determined in § 63.564(g)(2) no more than 20 percent above the baseline vacuum pressure.

(C) *Carbon adsorbers with steam regeneration.* The owner or operator shall establish as operating parameters the baseline total stream flow using the procedures described in § 63.565(j) and a baseline carbon bed temperature after cooling of the bed using the procedures

in § 63.565(f)(2). Following the date on which the initial performance test is completed, the facility shall be operated with the total stream flow, as determined in § 63.564(g)(3), no more than 20 percent below the baseline stream flow and with the carbon bed temperature (measured within 15 minutes after completion of the cooling cycle), as determined in § 63.564(g)(3), no more than 10 percent or 5.6°C (10°F) above the baseline carbon bed temperature, whichever is less stringent.

(iii) *Outlet VOC concentration of 1,000 ppmv for gasoline loading.* Following the date on which the initial performance test is completed, the facility shall operate with a block average outlet VOC concentration as determined in § 63.564(g)(1) of no more than 1,200 ppmv VOC.

(7) *Condenser/refrigeration unit.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of and/or the outlet VOC concentration from the recovery device used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) using the test methods in § 63.565(d). The owner or operator shall comply with either paragraph (b)(7)(i), (ii), or (iii) of this section.

(i) *VOC outlet concentration limit for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(h)(2) no more than 20 percent above the baseline VOC concentration.

(ii) *Baseline temperature for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline temperature using the procedures described in § 63.565(f). Following the date on which the initial performance test is completed, the facility shall operate with a block average temperature, as determined in § 63.564(h)(1), no more than 28°C (50°F) above the baseline temperature.

(iii) *Baseline parameters for 1,000 ppmv VOC concentration limit for gasoline loading.* The owner or operator shall monitor either the outlet VOC concentration or the outlet temperature of the unit. For sources monitoring temperature, the owner or operator shall establish as an operating parameter the baseline temperature using the procedures described in § 63.565(f). Following the date on which the initial performance test is completed, the facility shall operate with a block average outlet VOC concentration, as determined in § 63.564(h)(2), of no more than 1,200 ppmv VOC or with a block average temperature, as determined in § 63.564(h)(1), no more than 28°C (50°F) above the baseline temperature.

(8) *Absorber.* During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of the absorber and/or the outlet VOC concentration from the recovery device used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) using the test methods in § 63.565(d). The owner or operator shall comply with either paragraph (b)(8)(i) or (ii) of this section.

(i) *VOC outlet concentration limit for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline VOC concentration using the procedures described in § 63.565(g). Following the date on which the initial performance test is completed, the facility shall be operated with a block average outlet VOC concentration as determined in § 63.564(i)(1) no more than 20 percent above the baseline VOC concentration.

(ii) *Baseline liquid-to-vapor ratio for required percent recovery efficiency.* The owner or operator shall establish as an operating parameter the baseline liquid flow to vapor flow (L/V) ratio using the procedures described in § 63.565(k). Following the date on which the initial performance test is completed, the facility shall operate with a block average L/V ratio, as determined in § 63.564(i)(2), no more than 20 percent below the baseline L/V ratio.

(9) *Alternative control devices.* For sources complying with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2) with the use of a control technology other

than the devices discussed in paragraphs (b)(4) through (8) of this section, the owner or operator of an affected source shall provide to the Administrator information describing the design and operation of the air pollution control system, including recommendations for the operating parameter(s) to be monitored to indicate proper operation and maintenance of the air pollution control system. Based on this information, the Administrator shall determine the operating parameter(s) to be established during the performance test. During the initial performance test required in paragraph (b)(1) of this section, the owner or operator shall determine the efficiency of the air pollution control system using the test methods in § 63.565(d). The device shall achieve at least the percent destruction efficiency or recovery efficiency required under § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2). The owner or operator shall establish the operating parameter(s) approved by the Administrator. Following the date on which the initial performance test is complete, the facility shall operate either above or below a maximum or minimum operating parameter, as appropriate.

(10) *Emission estimation.* The owner or operator of a source subject to § 63.562(b)(2), (3), and (4) shall use the emission estimation procedures in § 63.565(l) to calculate HAP emissions.

(c) *Leak detection and repair for vapor collection systems and control devices.* The following procedures are required for all sources subject to § 63.562(b), (c), or (d).

(1) *Annual leak detection and repair for vapor collection systems and control devices.* The owner or operator of an affected source shall inspect and monitor all ductwork and piping and connections to vapor collection systems and control devices once each calendar year using Method 21.

(2) *Ongoing leak detection and repair for vapor collection systems and control devices.* If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, all ductwork and piping and connections to vapor collection systems and control devices shall be inspected to the extent

necessary to positively identify the potential leak and any potential leaks shall be monitored within 5 days by Method 21. Each detection of a leak shall be recorded, and the leak shall be tagged until repaired.

(3) When a leak is detected, a first effort to repair the vapor collection system and control device shall be made within 15 days or prior to the next marine tank vessel loading operation, whichever is later.

§ 63.564 Monitoring requirements.

(a)(1) The owner or operator of an affected source shall comply with the monitoring requirements in § 63.8 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and the monitoring requirements in this section.

(2) Each owner or operator of an affected source shall monitor the parameters specified in this section. All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment shall include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

(3) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all continuous parametric monitoring systems (CPMS) and CEMS shall be in continuous operation while marine tank vessel loading operations are occurring and shall meet minimum frequency of operation requirements. Sources monitoring by use of CEMS and CPMS shall complete a minimum of one cycle of operation (sampling, analyzing, and/or data recording) for each successive 15-minute period.

(4) The owner or operator of a CMS installed in accordance with these emissions standards shall comply with the performance specifications either in performance specification (PS) 8 in 40 CFR part 60, appendix B for CEMS or

in § 63.7(c)(6) of subpart A of this part for CPMS.

(5) A CEMS is out of control when the measured values (i.e., daily calibrations, multipoint calibrations, and performance audits) exceed the limits specified in either PS 8 or in § 63.8(c)(7) of subpart A of this part. The owner or operator of a CEMS that is out of control shall submit all information concerning out of control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in § 63.567(e).

(b) *Vapor collection system of terminal.* Owners or operators of a source complying with § 63.563(a)(1) that uses a vapor collection system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall comply with paragraph (b)(1), (2), or (3) of this section.

(1) Measure and record the vent stream flowrate of each by-pass line once every 15 minutes. The owner or operator shall install, calibrate, maintain, and operate a flow indicator and data recorder. The flow indicator shall be installed immediately downstream of any valve (i.e., entrance to by-pass line) that could divert the vent stream from the control device to the atmosphere.

(2) Measure the vent stream flowrate of each by-pass line once every 15 minutes. The owner or operator shall install, calibrate, maintain, and operate a flow indicator with either an audio or visual alarm. The flow indicator and alarm shall be installed immediately downstream of any valve (i.e., entrance to by-pass line) that could divert the vent stream from the control device to the atmosphere. The alarm shall be checked every 6 months to demonstrate that it is functioning properly.

(3) Visually inspect the seal or closure mechanism once during each marine tank vessel loading operation and at least once every month to ensure that the valve is maintained in the closed position and that the vent stream is not diverted through the by-pass line; record all times when the car seals have been broken and the valve

position has been changed. Each bypass line valve shall be secured in the closed position with a car-seal or a lock-and-key type configuration.

(c) *Pressure/vacuum settings for the marine tank vessel's vapor collection equipment.* Owners or operators of a source complying with § 63.563(a)(3) shall measure continuously the operating pressure of the marine tank vessel during loading.

(d) *Loading at negative pressure.* Owners or operators of a source complying with § 63.563(a)(4)(iv) that load vessels at less than atmospheric pressure (i.e., negative gauge pressure) shall measure and record the loading pressure. The owner or operator shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device) and an audible and visible alarm system that is activated when the pressure vacuum specified in § 63.563(a)(4)(iv) is not attained. The owner or operator shall place the alarm system so that it can be seen and heard where cargo transfer is controlled. The owner or operator shall verify the accuracy of the pressure device once each calendar year with a reference pressure monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent pressure measurement device dedicated for this purpose).

(e) *Combustion device, except flare.* For sources complying with § 63.563(b)(4), use of a combustion device except a flare, the owner or operator shall comply with paragraph (e)(1), (2), or (3) of this section. Owners or operators complying with paragraphs (e)(2) or (3) shall also comply with paragraph (e)(4) of this section.

(1) *Outlet VOC concentration.* Monitor the VOC concentrations at the exhaust point of the combustion device and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the

1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a CEMS consistent with the requirements of PS 8 to measure the VOC concentration. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(2) *Operating temperature determined during performance testing.* If the baseline temperature was established during the performance test, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each cycle (same time period or cycle of the performance test) and a 3-cycle block average every third cycle.

(3) *Manufacturer's recommended operating temperature.* If the baseline temperature is based on the manufacturer recommended operating temperature, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each hour and a 3-hour block average every third hour.

(4) *Temperature monitor.* The owner or operator shall install, calibrate, operate, and maintain a temperature monitor accurate to within $\pm 5.6^{\circ}\text{C}$ ($\pm 10^{\circ}\text{F}$) or within 1 percent of the baseline temperature, whichever is less stringent, to measure the temperature. The monitor shall be installed at the exhaust point of the combustion device but not within the combustion zone. The owner or operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(f) *Flare.* For sources complying with § 63.563(b)(5), use of a flare, the owner or operator shall monitor and record continuously the presence of the flare

pilot flame. The owner or operator shall install, calibrate, maintain, and operate a heat sensing device (an ultraviolet beam sensor or thermocouple) at the pilot light to indicate the presence of a flame during the entire loading cycle.

(g) *Carbon adsorber.* For sources complying with §63.563(b)(6), use of a carbon adsorber, the owner or operator shall comply with paragraph (g)(1), (2), or (3) of this section.

(1) *Outlet VOC concentration.* Monitor the VOC concentrations at the exhaust point of each carbon adsorber unit and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the 1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a CEMS consistent with the requirements of PS 8 to measure the VOC concentration. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(2) *Carbon adsorbers with vacuum regeneration.* Monitor and record the regeneration time for carbon bed regeneration and monitor and record continuously the vacuum pressure of the carbon bed regeneration cycle. The owner or operator will record the time when the carbon bed regeneration cycle begins and when the cycle ends for a single carbon bed and will calculate a 3-cycle block average every third cycle. The owner or operator shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device). A data acquisition system shall record and compute a 3-cycle (carbon bed regeneration cycle) block average vacuum pressure every third cycle. The

owner or operator shall verify the accuracy of the pressure device once each calendar year with a reference pressure monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent pressure measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the pressure monitor being tested.

(3) *Carbon adsorbers with steam regeneration.* Monitor and record the total stream mass flow and monitor and record the carbon bed temperature after regeneration (but within 15 minutes of completion of the cooling cycle). The owner or operator will install, calibrate, maintain, and operate an integrating stream flow monitoring device that is accurate within ± 10 percent and that is capable of recording the total stream mass flow for each regeneration cycle. The owner or operator will install, calibrate, maintain, and operate a temperature monitor accurate to within $\pm 5.6^{\circ}\text{C}$ (10°F) or within 1 percent of the baseline carbon bed temperature, whichever is less stringent, to measure the carbon bed temperature. The monitor shall be installed at the exhaust point of the carbon bed. The data acquisition system shall record the carbon bed temperature after each cooling cycle (measured within 15 minutes of completion of the cooling cycle). The owner or operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(h) *Condenser/refrigeration unit.* For sources complying with §63.563(b)(7), use of a condenser/refrigeration unit, the owner or operator shall comply with either paragraph (h)(1) or (2) of this section.

(1) *Baseline temperature.* Monitor and record the temperature at the outlet of the unit. The owner or operator shall

install, calibrate, operate, and maintain a temperature monitor accurate to within $\pm 5.6^{\circ}\text{C}$ ($\pm 10^{\circ}\text{F}$) or within 1 percent of the baseline temperature, whichever is less stringent, to measure the temperature. The monitor shall be installed at the exhaust point of the condenser/refrigeration unit. For sources monitoring the temperature established during the performance test, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each cycle (same time period or cycle of the performance test) and a 3-hour block average every third cycle. For sources monitoring the manufacturer recommended temperature, the data acquisition system shall record the temperature every 15 minutes and shall compute and record an average temperature each hour and a 3-hour block average every third hour. The owner or operator shall verify the accuracy of the temperature monitor once each calendar year with a reference temperature monitor (traceable to National Institute of Standards and Technology (NIST) standards or an independent temperature measurement device dedicated for this purpose). During accuracy checking, the probe of the reference device shall be at the same location as that of the temperature monitor being tested.

(2) *Outlet VOC concentration.* Monitor the VOC concentrations at the outlet of the unit and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the 1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a VOC CEMS consistent with the requirements of PS 8 to measure the

VOC concentration. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(i) *Absorber.* For sources complying with § 63.563(b)(8), use of an absorber, the owner or operator shall comply with either paragraph (i)(1) or (2) of this section.

(1) *Outlet VOC concentration.* Monitor the VOC concentrations at the outlet of the absorber and record the output from the system. For sources monitoring the outlet VOC concentration established during the performance test, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each cycle (same time period or cycle as the performance test) and a 3-cycle block average concentration every third cycle. For sources monitoring the 1,000 ppmv VOC concentration for gasoline loading, a data acquisition system shall record a concentration every 15 minutes and shall compute and record an average concentration each hour and a 3-hour block average concentration every third hour. The owner or operator will install, calibrate, operate, and maintain a VOC CEMS consistent with the requirements of PS 8. The daily calibration requirements are required only on days when marine tank vessel loading operations occur.

(2) *L/V ratio.* Monitor and record the inlet liquid flowrate and the inlet gas flowrate to the absorber and record the calculated L/V ratio. The owner or operator shall install, calibrate, maintain, and operate liquid and gas flow indicators. For sources monitoring the L/V ratio established during the performance test, a data acquisition system shall record the flowrates and calculated ratio every 15 minutes and shall compute and record an average ratio each cycle (same time period or cycle as the performance test) and a 3-cycle block average ratio every third cycle. For sources monitoring the manufacturer recommended L/V ratio, a data acquisition system shall record the flowrates and calculated ratio every 15 minutes and shall compute and record an average ratio each hour and a 3-hour average ratio every third

hour. The liquid and gas flow indicators shall be installed immediately upstream of the respective inlet lines to the absorber.

(j) *Alternate monitoring procedures.* Alternate procedures to those described in this section may be used upon application to, and approval by, the Administrator. The owner or operator shall comply with the procedures for use of an alternative monitoring method in § 63.8(f).

§ 63.565 Test methods and procedures.

(a) *Performance testing.* The owner or operator of an affected source in § 63.562 shall comply with the performance testing requirements in § 63.7 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and the performance testing requirements in this section.

(b) *Pressure/vacuum settings of marine tank vessel's vapor collection equipment.* For the purpose of determining compliance with § 63.563(a)(3), the following procedures shall be used:

(1) Calibrate and install a pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument) capable of measuring up to the maximum relief set pressure of the pressure-vacuum vents;

(2) Connect the pressure measurement device to a pressure tap in the terminal's vapor collection system, located as close as possible to the connection with the marine tank vessel; and

(3) During the performance test required in § 63.563(b)(1), record the pressure every 5 minutes while a marine tank vessel is being loaded and record the highest instantaneous pressure and vacuum that occurs during each loading cycle.

(c) *Vapor-tightness test procedures for the marine tank vessel.* When testing a vessel for vapor tightness to comply with the marine vessel vapor-tightness requirements of § 63.563(a)(4)(i), the owner or operator of a source shall use the methods in either paragraph (c)(1) or (2) in this section.

(1) *Pressure test for the marine tank vessel.* (i) Each product tank shall be pressurized with dry air or inert gas to

no more than the pressure of the lowest pressure relief valve setting.

(ii) Once the pressure is obtained, the dry air or inert gas source shall be shut off.

(iii) At the end of one-half hour, the pressure in the product tank and piping shall be measured. The change in pressure shall be calculated using the following formula:

$$P = P_i - P_f$$

Where:

P=change in pressure, inches of water.
P_i=pressure in tank when air/gas source is shut off, inches of water.

P_f=pressure in tank at the end of one-half hour after air/gas source is shut off, inches of water.

(iv) The change in pressure, P, shall be compared to the pressure drop calculated using the following formula:

$$PM = 0.861 P_{ia} L/V$$

Where:

PM=maximum allowable pressure change, inches of water.

P_{ia}=pressure in tank when air/gas source is shut off, psia.

L=maximum permitted loading rate of vessel, barrels per hour.

V=total volume of product tank, barrels.

(v) If $P \leq PM$, the vessel is vapor tight.

(vi) If $P < PM$, the vessel is not vapor tight and the source of the leak must be identified and repaired prior to re-testing.

(2) *Leak test for the marine tank vessel.* Each owner or operator of a source complying with §§ 63.563(a)(4)(ii) or (iii) shall use Method 21 as the vapor-tightness leak test for marine tank vessels. The test shall be conducted during the final 20 percent of loading of each product tank of the marine vessel, and it shall be applied to any potential sources of vapor leaks on the vessel.

(d) *Combustion (except flare) and recovery control device performance test procedures.* (1) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(2) All testing shall be performed during the last 20 percent of loading of a tank or compartment.

(3) All emission testing intervals shall consist of each 5 minute period during the performance test. For each

interval, the following shall be performed:

(i) *Readings.* The reading from each measurement instrument shall be recorded.

(ii) *Sampling Sites.* Method 1 or 1A of appendix A of part 60 of this chapter, as appropriate, shall be used for selection of sampling sites. Sampling sites shall be located at the inlet and outlet of the combustion device or recovery device except for owners or operators complying with the 1,000 ppmv VOC emissions limit for gasoline vapors under § 63.563(b)(6) or (7), where the sampling site shall be located at the outlet of the recovery device.

(iii) *Volume exhausted.* The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D of appendix A of part 60 of this chapter, as appropriate.

(4) *Combustion devices, except flares.* The average VOC concentration in the vent upstream and downstream of the control device shall be determined using Method 25 of appendix A of part 60 of this chapter for combustion devices, except flares. The average VOC concentration shall correspond to the volume measurement by taking into account the sampling system response time.

(5) *Recovery devices.* The average VOC concentration in the vent upstream and downstream of the control device shall be determined using Method 25A of appendix A of part 60 of this chapter for recovery devices. The average VOC concentration shall correspond to the volume measurement by taking into account the sampling system response time.

(6) The VOC mass at the inlet and outlet of the combustion or recovery device during each testing interval shall be calculated as follows:

$$M_j = FKV_s C_{VOC}$$

Where:

M_j =mass of VOC at the inlet and outlet of the combustion or recovery device during testing interval j , kilograms (kg).

$F=10^{-6}$ =conversion factor, (cubic meters VOC/cubic meters air)(1/ppmv) (m^3 VOC/ m^3 air)(1/ppmv).

K =density, kilograms per cubic meter (kg/m^3 VOC), standard conditions, 20 °C and 760 mm Hg.

V_s =volume of air-vapor mixture at the inlet and outlet of the combustion or recovery device, cubic meters (m^3) at standard conditions, 20 °C and 760 mm Hg.

C_{VOC} =VOC concentration (as measured) at the inlet and outlet of the combustion or recovery device, ppmv, dry basis.

s =standard conditions, 20 °C and 760 mm Hg.

(7) The VOC mass emission rates at the inlet and outlet of the recovery or combustion device shall be calculated as follows:

$$E_i = \frac{\sum_{j=1}^n M_{ij}}{T}$$

$$E_o = \frac{\sum_{j=1}^n M_{oj}}{T}$$

Where:

E_i , E_o =mass flow rate of VOC at the inlet (i) and outlet (o) of the recovery or combustion device, kilogram per hour (kg/hr).

M_{ij} , M_{oj} =mass of VOC at the inlet (i) or outlet (o) during testing interval j , kg.

T =Total time of all testing intervals, hour.

n =number of testing intervals.

(8) Where Method 25 or 25A is used to measure the percent reduction in VOC, the percent reduction across the combustion or recovery device shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100\%)$$

Where:

R =control efficiency of control device, percent.

E_i =mass flow rate of VOC at the inlet to the combustion or recovery device as calculated under paragraph (c)(7) of this section, kg/hr.

E_o =mass flow rate of VOC at the outlet of the combustion or recovery device, as calculated under paragraph (c)(7) of this section, kg/hr.

(9) Repeat the procedures in paragraph (d)(1) through (d)(8) of this section 3 times. The arithmetic average percent efficiency of the three runs shall determine the overall efficiency of the control device.

(10) Use of methods other than Method 25 or Method 25A shall be validated pursuant to Method 301 of appendix A of part 63 of this chapter.

(e) *Performance test for flares.* When a flare is used to comply with § 63.562(b)(2), (3), and (4), (c)(3) and (4), and (d)(2), the source must demonstrate that the flare meets the requirements of § 63.11 of subpart A of this part. In addition, a performance test according to Method 22 of appendix A of part 63 shall be performed to determine visible emissions. The observation period shall be at least 2 hours and shall be conducted according to Method 22. Performance testing shall be conducted during three complete loading cycles with a separate test run for each loading cycle. The observation period for detecting visible emissions shall encompass each loading cycle. Integrated sampling to measure process vent stream flow rate shall be performed continuously during each loading cycle. The owner or operator shall record all visible emission readings, heat content determinations, flow rate measurements, maximum permitted velocity calculations, and exit velocity determinations made during the performance test.

(f) *Baseline temperature.* The procedures in this paragraph shall be used to determine the baseline temperature required in § 63.563(b)(4), (6), and (7) for combustion devices, carbon adsorber beds, and condenser/refrigeration units, respectively, and to monitor the temperature as required in § 63.564(e), (g), and (h). The owner or operator shall comply with either paragraph (f)(1) or (2) of this section.

(1) *Baseline temperature from performance testing.* The owner or operator shall establish the baseline temperature as the temperature at the outlet point of the unit averaged over three test runs from paragraph (d) of this section. Temperature shall be measured every 15 minutes.

(2) *Baseline temperature from manufacturer.* The owner or operator shall es-

tablish the baseline temperature as the manufacturer recommended minimum operating temperature for combustion devices, maximum operating temperature for condenser units, and maximum operating temperature for carbon beds of carbon adsorbers.

(g) *Baseline outlet VOC concentration.* The procedures in this paragraph shall be used to determine the outlet VOC concentration required in § 63.563(b)(4), (6), (7), and (8) for combustion devices except flare, carbon adsorbers, condenser/refrigeration units, and absorbers, respectively, and to monitor the VOC concentration as required in § 63.564(e), (g), (h), and (i). The owner or operator shall use the procedures outlined in Method 25A. For the baseline VOC concentration, the arithmetic average of the outlet VOC concentration from three test runs from paragraph (d) of this section shall be calculated for the control device. The VOC concentration shall be measured at least every 15 minutes. Compliance testing of VOC CEMS shall be performed using PS 8.

(h) *Baseline regeneration time for carbon bed regeneration.* The procedures in this paragraph shall be used to demonstrate the baseline regeneration time for the vacuum stage of carbon bed regeneration required in § 63.563(b)(6) for a carbon adsorber and to monitor the regeneration time for the vacuum regeneration as required in § 63.564(g). The owner or operator shall comply with paragraph (h)(1) or (2).

(1) *Baseline regeneration time from performance testing.* The owner or operator shall establish the baseline regeneration time as the length of time for the vacuum stage of carbon bed regeneration averaged over three test runs from paragraph (d) of this section.

(2) *Baseline regeneration time from manufacturer recommendation.* The owner or operator shall establish the baseline regeneration time as the manufacturer recommended minimum regeneration time for the vacuum stage of carbon bed regeneration.

(i) *Baseline vacuum pressure for carbon bed regeneration.* The procedures in this paragraph shall be used to demonstrate the baseline vacuum pressure for the

vacuum stage of carbon bed regeneration required in § 63.563(b)(6) for a carbon adsorber and to monitor the vacuum pressure as required in § 63.564(g). The owner or operator shall establish the baseline vacuum pressure as the manufacturer recommended minimum vacuum for carbon bed regeneration.

(j) *Baseline total stream flow.* The procedures in this paragraph shall be used to demonstrate the baseline total stream flow for steam regeneration required in § 63.563(b)(6) for a carbon adsorber and to monitor the total stream flow as required in § 63.564(g). The owner or operator shall establish the baseline stream flow as the manufacturer recommended minimum total stream flow for carbon bed regeneration.

(k) *Baseline L/V ratio.* The procedures in this paragraph shall be used to determine the baseline L/V ratio required in § 63.563(b)(8) for an absorber and to monitor the L/V ratio as required in § 63.564(i). The owner or operator shall comply with either paragraph (k)(1) or (2) of this section.

(1) *Baseline L/V ratio from performance test.* The owner or operator shall establish the baseline L/V ratio as the calculated value of the inlet liquid flow divided by the inlet gas flow to the absorber averaged over three test runs using the procedures in paragraph (d) of this section.

(2) *Baseline L/V ratio from manufacturer.* The owner or operator shall establish the baseline L/V ratio as the manufacturer recommended minimum L/V ratio for absorber operation.

(l) *Emission estimation procedures.* For sources with emissions less than 10 or 25 tons and sources with emissions of 10 or 25 tons, the owner or operator shall calculate an annual estimate of HAP emissions, excluding commodities exempted by § 63.560(d), from marine tank vessel loading operations. Emission estimates and emission factors shall be based on test data, or if test data is not available, shall be based on measurement or estimating techniques generally accepted in industry practice for operating conditions at the source.

(m) *Alternate test procedures.* (1) Alternate test procedures to those described in this section may be used upon appli-

cation to, and approval by, the Administrator.

(2) If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified, the owner or operator shall refrain from conducting the performance test until the Administrator approves the use of the alternative method when the Administrator approves the site-specific test plan (if review of the site-specific test plan is requested) or until after the alternative method is approved (see § 63.7(f) of subpart A of this part). If the Administrator does not approve the site-specific test plan (if review is requested) or the use of the alternative method within 30 days before the test is scheduled to begin, the performance test dates specified in § 63.563(b)(1) shall be extended such that the owner or operator shall conduct the performance test within 60 calendar days after the Administrator approves the site-specific test plan or after use of the alternative method is approved. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

§ 63.566 Construction and reconstruction.

(a) The owner or operator of an affected source shall fulfill all requirements for construction or reconstruction of a source in § 63.5 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and construction or reconstruction requirements in this section.

(b)(1) *Application for approval of construction or reconstruction.* The provisions of this paragraph and § 63.5(d)(1)(ii) and (iii), (2), (3), and (4) of subpart A implement section 112(i)(1) of the Act.

(2) *General application requirements.* An owner or operator who is subject to the requirements of § 63.5(b)(3) of subpart A shall submit to the Administrator an application for approval of

the construction of a new source, the reconstruction of a source, or the reconstruction of a source not subject to the emissions standards in § 63.562 such that the source becomes an affected source. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of § 63.567(b)(3). The owner or operator may submit the application for approval well in advance of the date construction or reconstruction is planned to commence in order to ensure a timely review by the Administrator and that the planned commencement date will not be delayed.

(c) *Approval of construction or reconstruction based on prior State preconstruction review.* The owner or operator shall submit to the Administrator the request for approval of construction or reconstruction under this paragraph and § 63.5(f)(1) of subpart A of this part no later than the application deadline specified in paragraph (b)(2) of this section. The owner or operator shall include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in § 63.5(e) of subpart A of this part. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction.

§ 63.567 Recordkeeping and reporting requirements.

(a) The owner or operator of an affected source shall fulfill all reporting and recordkeeping requirements in §§ 63.9 and 63.10 of subpart A of this part in accordance with the provisions for applicability of subpart A to this subpart in Table 1 of § 63.560 and fulfill all reporting and recordkeeping requirements in this section. These reports will be made to the Administrator at the appropriate address identified in § 63.13 of subpart A of this part.

(1) Reports required by subpart A and this section may be sent by U.S. mail, facsimile (fax), or by another courier.

(i) Submittals sent by U.S. mail shall be postmarked on or before the specified date.

(ii) Submittals sent by other methods shall be received by the Administrator on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(b) *Notification requirements.* The owner or operator of an affected source shall fulfill all notification requirements in § 63.9 of subpart A of this part in accordance with the provisions for applicability of that section to this subpart in Table 1 of § 63.560 and the notification requirements in this paragraph.

(1) *Applicability.* If a source that otherwise would not be subject to the emissions standards subsequently increases its HAP emissions calculated on a 24-month annual average basis after September 19, 1997 or increases its annual HAP emissions after September 20, 1999 or subsequently increases its gasoline or crude loading throughput calculated on a 24-month annual average basis after September 19, 1996 or increases its gasoline or crude loading annual throughput after September 21, 1998 such that the source becomes subject to the emissions standards, such source shall be subject to the notification requirements of § 63.9 of subpart A of this part and the notification requirements of this paragraph.

(2) *Initial notification for sources with startup before the effective date.* The owner or operator of a source with initial startup before the effective date shall notify the Administrator in writing that the source is subject to the relevant standard. The notification shall be submitted not later than 365 days after the effective date of the emissions standards and shall provide the following information:

(i) The name and address of the owner or operator;

(ii) The address (i.e., physical location) of the source;

(iii) An identification of this emissions standard that is the basis of the notification and the source's compliance date;

(iv) A brief description of the nature, size, design, and method of operation of the source;

(v) A statement that the source is a major source.

(3) *Initial notification for sources with startup after the effective date.* The owner or operator of a new or reconstructed source or a source that has been reconstructed such that it is subject to the emissions standards that has an initial startup after the effective date but before the compliance date, and for which an application for approval of construction or reconstruction is not required under § 63.5(d) of subpart A of this part and § 63.566 of this subpart, shall notify the Administrator in writing that the source is subject to the standard no later than 365 days or 120 days after initial startup, whichever occurs before notification of the initial performance test in § 63.9(e) of subpart A of this part. The notification shall provide all the information required in paragraph (b)(2) of this section, delivered or postmarked with the notification required in paragraph (b)(4) of this section.

(4) *Initial notification requirements for constructed/reconstructed sources.* After the effective date of these standards, whether or not an approved permit program is effective in the State in which a source subject to these standards is (or would be) located, an owner or operator subject to the notification requirements of § 63.5 of subpart A of this part and § 63.566 of this subpart who intends to construct a new source subject to these standards, reconstruct a source subject to these standards, or reconstruct a source such that it becomes subject to these standards, shall comply with paragraphs (b)(4)(i), (ii), (iii), and (iv) of this section.

(i) *Notify the Administrator in writing of the intended construction or reconstruction.* The notification shall be submitted as soon as practicable before the construction or reconstruction is planned to commence. The notification shall include all the information required for an application for approval of construction or reconstruction as specified in § 63.5 of subpart A of this part. The application for approval of construction or reconstruction may be

used to fulfill the requirements of this paragraph.

(ii) Submit a notification of the date when construction or reconstruction was commenced, delivered or postmarked not later than 30 days after such date, if construction was commenced after the effective date.

(iii) Submit a notification of the anticipated date of startup of the source, delivered or postmarked not more than 60 days nor less than 30 days before such date;

(iv) Submit a notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(5) *Additional initial notification requirements.* The owner or operator of sources subject to § 63.562(b)(2), (3), and (4), MACT standards, shall also include in the initial notification report required by paragraph (b)(2) and (3) the 24-month annual average or the annual actual HAP emissions from marine tank vessel loading operations, as appropriate, at all loading berths, as calculated according to the procedures in § 63.565(l). Emissions will be reported by commodity and type of marine tank vessel (barge or tanker) loaded.

(ii) As an alternative to reporting the information in paragraph (b)(5)(i) of this section, the source may submit documentation showing that all HAP-containing marine tank vessel loading operations, not exempt by § 63.560(d), occurred using vapor tight vessels that comply with the procedures of § 63.563(a) and that the emissions were routed to control devices meeting the requirements specified in § 63.563(b).

(c) *Request for extension of compliance.* If the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of subpart A of this part, he/she may submit to the Administrator (or State with an approved permit program) a request for an extension of compliance as specified in § 63.6(i)(4)(i)(B), (i)(5), and (i)(6) of subpart A of this part.

(d) *Reporting for performance testing of flares.* The owner or operator of a source required to conduct an opacity

performance test shall report the opacity results and other information required by § 63.565(e) and § 63.11 of subpart A of this part with the notification of compliance status.

(e) *Summary reports and excess emissions and monitoring system performance reports*—(1) *Schedule for summary report and excess emissions and monitoring system performance reports.* Excess emissions and parameter monitoring exceedances are defined in § 63.563(b). The owner or operator of a source subject to these emissions standards that is required to install a CMS shall submit an excess emissions and continuous monitoring system performance report and/or a summary report to the Administrator once each year, except, when the source experiences excess emissions, the source shall comply with a semi-annual reporting format until a request to reduce reporting frequency under paragraph (e)(2) of this section is approved.

(2) *Request to reduce frequency of excess emissions and continuous monitoring system performance reports.* An owner or operator who is required to submit excess emissions and continuous monitoring system performance and summary reports on a semi-annual basis may reduce the frequency of reporting to annual if the following conditions are met:

(i) For 1 full year the source's excess emissions and continuous monitoring system performance reports continually demonstrate that the source is in compliance; and

(ii) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and subpart A of this part.

(3) The frequency of reporting of excess emissions and continuous monitoring system performance and summary reports required may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the 5-year recordkeeping prior to the intended change,

including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation maintenance requirements. Such information may be used by the Administrator to make a judgement about the source's potential for non-compliance in the future. If the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(4) *Content and submittal dates for excess emissions and monitoring system performance reports.* All excess emissions and monitoring system performance reports and all summary reports, if required per paragraph (e)(5) and (6) of this section, shall be delivered or postmarked within 30 days following the end of each calendar year, or within 30 days following the end of each six month period, if appropriate. Written reports of excess emissions or exceedances of process or control system parameters shall include all information required in § 63.10(c)(5) through (13) of subpart A of this part as applicable in Table 1 of § 63.560 and information from any calibration tests in which the monitoring equipment is not in compliance with PS 8 or other methods used for accuracy testing of temperature, pressure, or flow monitoring devices. The written report shall also include the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances have occurred or monitoring equipment has not been inoperative, repaired, or adjusted, such information shall be stated in the report. This information will be kept for a minimum of 5 years and made readily available to the Administrator or delegated State authority upon request.

(5) If the total duration of excess emissions or control system parameter exceedances for the reporting period is less than 5 percent of the total operating time for the reporting period, and CMS downtime for the reporting period

is less than 10 percent of the total operating time for the reporting period, only the summary report of § 63.10(e)(3)(vi) of subpart A of this part shall be submitted, and the full excess emissions and continuous monitoring system performance report of paragraph (e)(4) of this section need not be submitted unless required by the Administrator.

(6) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is 5 percent or greater of the total operating time for the reporting period, or the total CMS downtime for the reporting period is 10 percent or greater of the total operating time for the reporting period, both the summary report of § 63.10(e)(3)(vi) of subpart A of this part and the excess emissions and continuous monitoring system performance report of paragraph (e)(4) of this section shall be submitted.

(f) *Vapor collection system of the terminal.* Each owner or operator of an affected source shall submit with the initial performance test and maintain in an accessible location on site an engineering report describing in detail the vent system, or vapor collection system, used to vent each vent stream to a control device. This report shall include all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device, and identify which valves are car-sealed opened and which valves are car-sealed closed.

(g) If a vent system, or vapor collection system, containing valves that could divert the emission stream away from the control device is used, each owner or operator of an affected source shall keep for at least 5 years up-to-date, readily accessible continuous records of:

(1) All periods when flow bypassing the control device is indicated if flow indicators are installed under § 63.563(a)(1) and § 63.564(b), and

(2) All times when maintenance is performed on car-sealed valves, when the car-seal is broken, and when the valve position is changed (i.e., from open to closed for valves in the vent piping to the control device and from closed to open for valves that vent the stream directly or indirectly to the at-

mosphere bypassing the control device) if valves are monitored under § 63.564(b).

(h) The owner or operator of an affected source shall keep the vapor-tightness documentation required under § 63.563(a)(4) on file at the source in a permanent form available for inspection.

(i) *Vapor tightness test documentation for marine tank vessels.* The owner or operator of an affected source shall maintain a documentation file for each marine tank vessel loaded at that source to reflect current test results as determined by the appropriate method in § 63.565(c)(1) and (2). Updates to this documentation file shall be made at least once per year. The owner or operator shall include, as a minimum, the following information in this documentation:

- (1) Test title;
- (2) Marine vessel owner and address;
- (3) Marine vessel identification number;
- (4) Loading time, according to § 63.563(a)(4)(ii) or (iii), if appropriate;
- (5) Testing location;
- (6) Date of test;
- (7) Tester name and signature;
- (8) Test results from § 63.565(c)(1) or (2), as appropriate;
- (9) Documentation provided under § 63.563(a)(4)(ii) and (iii)(B) showing that the repair of leaking components attributed to a failure of a vapor-tightness test is technically infeasible without dry-docking the vessel; and
- (10) Documentation that a marine tank vessel failing a pressure test or leak test has been repaired.

(j) *Emission estimation reporting and recordkeeping procedures.* The owner or operator of each source complying with the emission limits specified in § 63.562(b)(2), (3), and (4) shall comply with the following provisions:

- (1) Maintain records of all measurements, calculations, and other documentation used to identify commodities exempted under § 63.560(d);
- (2) Keep readily accessible records of the emission estimation calculations performed in § 63.565(l) for 5 years; and
- (3) Submit an annual report of the source's HAP control efficiency calculated using the procedures specified

in § 63.565(l), based on the source's actual throughput.

(4) Owners or operators of marine tank vessel loading operations specified in § 63.560(a)(3) shall retain records of the emissions estimates determined in § 63.565(l) and records of their actual throughputs by commodity, for 5 years.

(k) *Leak detection and repair of vapor collection systems and control devices.* When each leak of the vapor collection system, or vapor collection system, and control device is detected and repaired as specified in § 63.563(c) the following information required shall be maintained for 5 years:

- (1) Date of inspection;
- (2) Findings (location, nature, and severity of each leak);
- (3) Leak determination method;
- (4) Corrective action (date each leak repaired, reasons for repair interval); and
- (5) Inspector name and signature.

Subparts Z-BB [Reserved]

Subpart CC—National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

SOURCE: 60 FR 43260, Aug. 18, 1995, unless otherwise noted.

§ 63.640 Applicability and designation of affected source.

(a) This subpart applies to petroleum refining process units and to related emission points that are specified in paragraphs (c)(5) through (c)(7) of this section that are located at a plant site that meet the criteria in paragraphs (a)(1) and (a)(2) of this section;

(1) Are located at a plant site that is a major source as defined in section 112(a) of the Clean Air Act; and

(2) Emit or have equipment containing or contacting one or more of the hazardous air pollutants listed in table 1 of this subpart.

(b) For process units that are designed and operated as flexible operation units, the applicability of this subpart shall be determined for existing sources based on the expected utilization for the 5 years following promulgation of this subpart and for new

sources based on the expected utilization for the first 5 years after startup.

(c) For the purpose of this subpart, the affected source shall comprise all emission points, in combination, listed in paragraphs (c)(1) through (c)(7) of this section that are located at a single refinery plant site.

(1) All miscellaneous process vents from petroleum refining process units meeting the criteria in paragraph (a) of this section;

(2) All storage vessels associated with petroleum refining process units meeting the criteria in paragraph (a) of this section;

(3) All wastewater streams and treatment operations associated with petroleum refining process units meeting the criteria in paragraph (a) of this section;

(4) All equipment leaks from petroleum refining process units meeting the criteria in paragraph (a) of this section;

(5) All gasoline loading racks classified under Standard Industrial Classification code 2911 meeting the criteria in paragraph (a) of this section;

(6) All marine vessel loading operations located at a petroleum refinery meeting the criteria in paragraph (a) of this section and the applicability criteria of subpart Y, § 63.560; and

(7) All storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery meeting the criteria in paragraph (a) of this section.

(d) The affected source subject to this subpart does not include the emission points listed in paragraphs (d)(1) through (d)(5) of this section.

(1) Stormwater from segregated stormwater sewers;

(2) Spills;

(3) Any pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system that is intended to operate in organic hazardous air pollutant service, as defined in § 63.641 of this subpart, for less than 300 hours during the calendar year;

(4) Catalytic cracking unit and catalytic reformer catalyst regeneration vents, and sulfur plant vents; and

(5) Emission points routed to a fuel gas system, as defined in § 63.641 of this subpart. No testing, monitoring, recordkeeping, or reporting is required for refinery fuel gas systems or emission points routed to refinery fuel gas systems.

(e) The owner or operator shall follow the procedures specified in paragraphs (e)(1) and (e)(2) of this section to determine whether a storage vessel is part of a source to which this subpart applies.

(1) Where a storage vessel is used exclusively by a process unit, the storage vessel shall be considered part of that process unit.

(i) If the process unit is a petroleum refining process unit subject to this subpart, then the storage vessel is part of the affected source to which this subpart applies.

(ii) If the process unit is not subject to this subpart, then the storage vessel is not part of the affected source to which this subpart applies.

(2) If a storage vessel is not dedicated to a single process unit, then the applicability of this subpart shall be determined according to the provisions in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.

(i) If a storage vessel is shared among process units and one of the process units has the predominant use, as determined by paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section, then the storage vessel is part of that process unit.

(A) If the greatest input on a volume basis into the storage vessel is from a process unit that is located on the same plant site, then that process unit has the predominant use.

(B) If the greatest input on a volume basis into the storage vessel is provided from a process unit that is not located on the same plant site, then the predominant use shall be the process unit that receives the greatest amount of material on a volume basis from the storage vessel at the same plant site.

(ii) If a storage vessel is shared among process units so that there is no single predominant use, and at least one of those process units is a petro-

leum refining process unit subject to this subpart, the storage vessel shall be considered to be part of the petroleum refining process unit that is subject to this subpart. If more than one petroleum refining process unit is subject to this subpart, the owner or operator may assign the storage vessel to any of the petroleum refining process units subject to this subpart.

(iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined based on the utilization of that storage vessel during the year preceding promulgation of this subpart. This determination shall be reported as specified in § 63.654(h)(6)(ii) of this subpart.

(f) The owner or operator shall follow the procedures specified in paragraphs (f)(1) through (f)(5) of this section to determine whether a miscellaneous process vent from a distillation unit is part of a source to which this subpart applies.

(1) If the greatest input to the distillation unit is from a process unit located on the same plant site, then the distillation unit shall be assigned to that process unit.

(2) If the greatest input to the distillation unit is provided from a process unit that is not located on the same plant site, then the distillation unit shall be assigned to the process unit located at the same plant site that receives the greatest amount of material from the distillation unit.

(3) If a distillation unit is shared among process units so that there is no single predominant use, as described in paragraphs (f)(1) and (f)(2) of this section, and at least one of those process units is a petroleum refining process unit subject to this subpart, the distillation unit shall be assigned to the petroleum refining process unit that is subject to this subpart. If more than one petroleum refining process unit is subject to this subpart, the owner or operator may assign the distillation unit to any of the petroleum refining process units subject to this rule.

(4) If the process unit to which the distillation unit is assigned is a petroleum refining process unit subject to this subpart and the vent stream contains greater than 20 parts per million

by volume total organic hazardous air pollutants, then the vent from the distillation unit is considered a miscellaneous process vent (as defined in § 63.641 of this subpart) and is part of the source to which this subpart applies.

(5) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined based on the utilization of that distillation unit during the year preceding promulgation of this subpart. This determination shall be reported as specified in § 63.654(h)(6)(iii).

(g) The provisions of this subpart do not apply to the processes specified in paragraphs (g)(1) through (g)(7) of this section.

(1) Research and development facilities, regardless of whether the facilities are located at the same plant site as a petroleum refining process unit that is subject to the provisions of this subpart;

(2) Equipment that does not contain any of the hazardous air pollutants listed in table 1 of this subpart that is located within a petroleum refining process unit that is subject to this subpart;

(3) Units processing natural gas liquids;

(4) Units that are used specifically for recycling discarded oil;

(5) Shale oil extraction units;

(6) Ethylene processes; and

(7) Process units and emission points subject to subparts F, G, H, and I of this part.

(h) Except as provided in paragraphs (k), (l), or (m) of this section, sources subject to this subpart are required to achieve compliance on or before the dates specified in paragraphs (h)(1) through (h)(4) of this section.

(1) New sources that commence construction or reconstruction after July 14, 1994 shall be in compliance with this subpart upon initial startup or the date of promulgation of this subpart, whichever is later, as provided in § 63.6(b) of subpart A of this part.

(2) Except as provided in paragraphs (h)(3) through (h)(5) of this section, existing sources shall be in compliance with this subpart no later than August 18, 1998, except as provided in § 63.6(c) of

subpart A of this part, or unless an extension has been granted by the Administrator as provided in § 63.6(i) of subpart A of this part.

(3) Marine tank vessels at existing sources shall be in compliance with this subpart no later than August 18, 1999 unless the vessels are included in an emissions average to generate emission credits. Marine tank vessels used to generate credits in an emissions average shall be in compliance with this subpart no later than August 18, 1998 unless an extension has been granted by the Administrator as provided in § 63.6(i).

(4) Existing Group 1 floating roof storage vessels shall be in compliance with § 63.646 at the first degassing and cleaning activity after August 18, 1998, or within 10 years after promulgation of the rule, whichever is first.

(5) An owner or operator may elect to comply with the provisions of § 63.648 (c) through (i) as an alternative to the provisions of § 63.648 (a) and (b). In such cases, the owner or operator shall comply no later than the dates specified in paragraphs (h)(5)(i) through (h)(5)(iii) of this section.

(i) Phase I (see table 2 of this subpart), beginning on August 18, 1998;

(ii) Phase II (see table 2 of this subpart), beginning no later than August 18, 1999; and

(iii) Phase III (see table 2 of this subpart), beginning no later than February 18, 2001.

(i) If an additional petroleum refining process unit is added to a plant site that is a major source as defined in section 112(a) of the Clean Air Act, the addition shall be subject to the requirements for a new source if it meets the criteria specified in paragraphs (i)(1) through (i)(3) of this section:

(1) It is an addition that meets the definition of construction in § 63.2 of subpart A of this part;

(2) Such construction commenced after July 14, 1994; and

(3) The addition has the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

(j) If any change is made to a petroleum refining process unit subject to

this subpart, the change shall be subject to the requirements for a new source if it meets the criteria specified in paragraphs (j)(1) and (j)(2) of this section:

(1) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part; and

(2) Such reconstruction commenced after July 14, 1994.

(k) If an additional petroleum refining process unit is added to a plant site or a change is made to a petroleum refining process unit and the addition or change is determined to be subject to the new source requirements according to paragraphs (i) or (j) of this section it must comply with the requirements specified in paragraphs (k)(1) and (k)(2) of this section:

(1) The reconstructed source, addition, or change shall be in compliance with the new source requirements upon initial startup of the reconstructed source or by the date of promulgation of this subpart, whichever is later; and

(2) The owner or operator of the reconstructed source, addition, or change shall comply with the reporting and recordkeeping requirements that are applicable to new sources. The applicable reports include, but are not limited to:

(i) The application for approval of construction or reconstruction shall be submitted as soon as practical before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of this subpart);

(ii) The Notification of Compliance Status report as required by § 63.654(f) for a new source, addition, or change;

(iii) Periodic Reports and Other Reports as required by § 63.654 (g) and (h);

(iv) Reports and notifications required by § 60.487 of subpart VV of part 60 or § 63.182 of subpart H of this part. The requirements for subpart H are summarized in table 3 of this subpart;

(v) Reports required by 40 CFR 61.357 of subpart FF;

(vi) Reports and notifications required by § 63.428 (b), (c), (g)(1), and (h)(1) through (h)(3) of subpart R. These requirements are summarized in table 4 of this subpart; and

(vii) Reports and notifications required by §§ 63.566 and 63.567 of subpart

Y of this part. These requirements are summarized in table 5 of this subpart.

(l) If an additional petroleum refining process unit is added to a plant site or if a miscellaneous process vent, storage vessel, gasoline loading rack, or marine tank vessel loading operation that meets the criteria in paragraphs (c)(1) through (c)(7) of this section is added to an existing petroleum refinery or if another deliberate operational process change creating an additional Group 1 emission point(s) (as defined in § 63.641) is made to an existing petroleum refining process unit, and if the addition or process change is not subject to the new source requirements as determined according to paragraphs (i) or (j) of this section, the requirements in paragraphs (l)(1) through (l)(3) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, or feed or raw material where the change requires construction or physical alteration of the existing equipment or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph and paragraph (m) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status report required by § 63.654(f).

(1) The added emission point(s) and any emission point(s) within the added or changed petroleum refining process unit are subject to the requirements for an existing source.

(2) The added emission point(s) and any emission point(s) within the added or changed petroleum refining process unit shall be in compliance with this subpart by the dates specified in paragraphs (l)(2)(i) or (l)(2)(ii) of this section, as applicable.

(i) If a petroleum refining process unit is added to a plant site or an emission point(s) is added to any existing petroleum refining process unit, the added emission point(s) shall be in compliance upon initial startup of any added petroleum refining process unit or emission point(s) or by 3 years after

the date of promulgation of this subpart, whichever is later.

(ii) If a deliberate operational process change to an existing petroleum refining process unit causes a Group 2 emission point to become a Group 1 emission point (as defined in §63.641), the owner or operator shall be in compliance upon initial startup or by 3 years after the date of promulgation of this subpart, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (m)(1) through (m)(3) of this section to establish a compliance date.

(3) The owner or operator of a petroleum refining process unit or of a storage vessel, miscellaneous process vent, wastewater stream, gasoline loading rack, or marine tank vessel loading operation meeting the criteria in paragraphs (c)(1) through (c)(7) of this section that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements that are applicable to existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (l)(3)(vii) of this section. A process change to an existing petroleum refining process unit shall be subject to the reporting requirements for existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (l)(3)(vii) of this section. The applicable reports include, but are not limited to:

(i) The Notification of Compliance Status report as required by §63.654(f) for the emission points that were added or changed;

(ii) Periodic Reports and other reports as required by §63.654 (g) and (h);

(iii) Reports and notifications required by sections of subpart A of this part that are applicable to this subpart, as identified in table 6 of this subpart.

(iv) Reports and notifications required by §63.182, or 40 CFR 60.487. The requirements of subpart H of this part are summarized in table 3 of this subpart;

(v) Reports required by §61.357 of subpart FF;

(vi) Reports and notifications required by §63.428 (b), (c), (g)(1), and (h)(1) through (h)(3) of subpart R of this part. These requirements are summarized in table 4 of this subpart; and

(vii) Reports and notifications required by §63.567 of subpart Y of this part. These requirements are summarized in table 5 of this subpart.

(4) If pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, or instrumentation systems are added to an existing source, they are subject to the equipment leak standards for existing sources in §63.648. A notification of compliance status report shall not be required for such added equipment.

(m) If a change that does not meet the criteria in paragraph (l) of this section is made to a petroleum refining process unit subject to this subpart, and the change causes a Group 2 emission point to become a Group 1 emission point (as defined in §63.641), then the owner or operator shall comply with the requirements of this subpart for existing sources for the Group 1 emission point as expeditiously as practicable, but in no event later than 3 years after the emission point becomes Group 1.

(1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(2) The compliance schedule shall be submitted within 180 days after the change is made, unless the compliance schedule has been previously submitted to the permitting authority. If it is not possible to determine until after the change is implemented whether the emission point has become Group 1, the compliance schedule shall be submitted within 180 days of the date when the affect of the change is known to the source. The compliance schedule may be submitted in the next Periodic Report if the change is made after the date the Notification of Compliance Status report is due.

(3) The Administrator shall approve or deny the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule

and justification. Approval is automatic if not received from the Administrator within 120 calendar days of receipt.

(n) Overlap of subpart CC with other regulations for storage vessels.

(1) After the compliance dates specified in paragraph (h) of this section, a Group 1 or Group 2 storage vessel that is part of an existing source and is also subject to the provisions of 40 CFR part 60 subpart Kb is required to comply only with the requirements of 40 CFR part 60 subpart Kb.

(2) After the compliance dates specified in paragraph (h) of this section a Group 1 storage vessel that is part of a new source and is subject to 40 CFR part 60, subpart Kb is required to comply only with this subpart.

(3) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is part of a new source and is subject to the control requirements in § 60.112b of 40 CFR part 60, subpart Kb is required to comply only with 40 CFR part 60, subpart Kb.

(4) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is part of a new source and is subject to 40 CFR 60.110b, but is not required to apply controls by 40 CFR 60.110b or 60.112b is required to comply only with this subpart.

(5) After the compliance dates specified in paragraph (h) of this section a Group 1 storage vessel that is also subject to the provisions of 40 CFR part 60, subparts K or Ka is required to only comply with the provisions of this subpart.

(6) After compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is subject to the control requirements of 40 CFR part 60, subparts K or Ka is required to only comply with the provisions of 40 CFR part 60, subparts K or Ka.

(7) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is subject to 40 CFR part 60, subparts K or Ka, but not to the control requirements of 40 CFR part 60, subparts K or Ka, is required to comply only with this subpart.

(o) Overlap of this subpart CC with other regulations for wastewater.

(1) After the compliance dates specified in paragraph (h) of this section a Group 1 wastewater stream managed in a piece of equipment that is also subject to the provisions of 40 CFR part 60, subpart QQQ is required to comply only with this subpart.

(2) After the compliance dates specified in paragraph (h) of this section a Group 1 or Group 2 wastewater stream that is conveyed, stored, or treated in a wastewater stream management unit that also receives streams subject to the provisions of §§ 63.133 through 63.147 of subpart G wastewater provisions of this part shall comply as specified in paragraphs (o)(2)(i) through (o)(2)(iii) of this section. Compliance with the provisions of paragraph (o)(2) of this section shall constitute compliance with the requirements of this subpart for that wastewater stream.

(i) The provisions in §§ 63.133 through 63.137 and § 63.140 of subpart G for all equipment used in the storage and conveyance of the Group 1 or Group 2 wastewater stream.

(ii) The provisions in both 40 CFR part 61, subpart FF and in §§ 63.138 and 63.139 of subpart G for the treatment and control of the Group 1 or Group 2 wastewater stream.

(iii) The provisions in §§ 63.143 through 63.148 of subpart G for monitoring and inspections of equipment and for recordkeeping and reporting requirements. The owner or operator is not required to comply with the monitoring, recordkeeping, and reporting requirements associated with the treatment and control requirements in 40 CFR part 61, subpart FF, §§ 61.355 through 61.357.

(p) Overlap of subpart CC with other regulations for equipment leaks. After the compliance dates specified in paragraph (h) of this section equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in this subpart.

(q) For overlap of subpart CC with local or State regulations, the permitting authority for the affected source may allow consolidation of the monitoring, recordkeeping, and reporting requirements under this subpart with

the monitoring, recordkeeping, and reporting requirements under other applicable requirements in 40 CFR parts 60, 61, or 63, and in any 40 CFR part 52 approved State implementation plan provided the implementation plan allows for approval of alternative monitoring, reporting, or recordkeeping requirements and provided that the permit contains an equivalent degree of compliance and control.

[60 FR 43260, Aug. 18, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29878, June 12, 1996]

§ 63.641 Definitions.

All terms used in this subpart shall have the meaning given them in the Clean Air Act, subpart A of this part, and in this section. If the same term is defined in subpart A and in this section, it shall have the meaning given in this section for purposes of this subpart.

Affected source means the collection of emission points to which this subpart applies as determined by the criteria in § 63.640.

Aliphatic means open-chained structure consisting of paraffin, olefin and acetylene hydrocarbons and derivatives.

Annual average true vapor pressure means the equilibrium partial pressure exerted by the stored liquid at the temperature equal to the annual average of the liquid storage temperature for liquids stored above or below the ambient temperature or at the local annual average temperature reported by the National Weather Service for liquids stored at the ambient temperature, as determined:

- (1) In accordance with methods specified in § 63.111 of subpart G of this part;
- (2) From standard reference texts; or
- (3) By any other method approved by the Administrator.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

By compound means by individual stream components, not by carbon equivalents.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position

of the valve cannot be changed without breaking the seal.

Closed vent system means a system that is not open to the atmosphere and is configured of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device or back into the process. If gas or vapor from regulated equipment is routed to a process (e.g., to a petroleum refinery fuel gas system), the process shall not be considered a closed vent system and is not subject to closed vent system standards.

Combustion device means an individual unit of equipment such as a flare, incinerator, process heater, or boiler used for the combustion of organic hazardous air pollutant vapors.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are accessible.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every hour and recorded at the frequency specified in § 63.654(i).

Continuous recorder means a data recording device recording an instantaneous data value or an average data value at least once every hour.

Control device means any equipment used for recovering, removing, or oxidizing organic hazardous air pollutants. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For miscellaneous process vents (as defined in this section), recovery devices (as defined in this section) are not considered control devices.

Delayed coker vent means a vent that is typically intermittent in nature, and usually occurs only during the initiation of the depressuring cycle of the decoking operation when vapor from the coke drums cannot be sent to the

fractionator column for product recovery, but instead is routed to the atmosphere through a closed blowdown system or directly to the atmosphere in an open blowdown system. The emissions from the decoking phases of delayed coker operations, which include coke drum deheading, draining, or decoking (coke cutting), are not considered to be delayed coker vents.

Distillate receiver means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

Distillation unit means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

Emission point means an individual miscellaneous process vent, storage vessel, wastewater stream, or equipment leak associated with a petroleum refining process unit; an individual storage vessel or equipment leak associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification code 2911; a gasoline loading rack classified under Standard Industrial Classification code 2911; or a marine tank vessel loading operation located at a petroleum refinery.

Equipment leak means emissions of organic hazardous air pollutants from a pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system “in organic hazardous air pollutant service” as defined in this section. Vents from wastewater collection and conveyance systems (including, but not limited to wastewater drains, sewer vents, and sump drains), tank mixers, and sample valves on storage tanks are not equipment leaks.

Flame zone means the portion of a combustion chamber of a boiler or

process heater occupied by the flame envelope created by the primary fuel.

Flexible operation unit means a process unit that manufactures different products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

Flow indicator means a device that indicates whether gas is flowing, or whether the valve position would allow gas to flow, in a line.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous streams generated by refinery operations, may blend them with sources of gas, if available, and transports the blended gaseous fuel at suitable pressures for use as fuel in heaters, furnaces, boilers, incinerators, gas turbines, and other combustion devices located within or outside of the refinery. The fuel is piped directly to each individual combustion device, and the system typically operates at pressures over atmospheric. The gaseous streams can contain a mixture of methane, light hydrocarbons, hydrogen and other miscellaneous species.

Gasoline loading rack means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill gasoline cargo tanks.

Group 1 gasoline loading rack means any gasoline loading rack classified under Standard Industrial Classification code 2911 that is located within a bulk gasoline terminal that has a gasoline throughput greater than 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput for the terminal as may be limited by compliance with enforceable conditions under Federal, State, or local law and discovered by the Administrator and any other person.

Group 1 marine tank vessel means a vessel at an existing source loaded at any land- or sea-based terminal or structure that loads liquid commodities with vapor pressures greater than or equal to 10.3 kilopascals in bulk onto marine tank vessels, that emits greater than 9.1 megagrams of any individual HAP or 22.7 megagrams of any combination of HAP annually after August 18, 1999, or a vessel at a new source

loaded at any land- or sea-based terminal or structure that loads liquid commodities with vapor pressures greater than or equal to 10.3 kilopascals onto marine tank vessels.

Group 1 miscellaneous process vent means a miscellaneous process vent for which the total organic HAP concentration is greater than or equal to 20 parts per million by volume, and the total volatile organic compound emissions are greater than or equal to 33 kilograms per day for existing sources and 6.8 kilograms per day for new sources at the outlet of the final recovery device (if any) and prior to any control device and prior to discharge to the atmosphere.

Group 1 storage vessel means a storage vessel at an existing source that has a design capacity greater than or equal to 177 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 10.4 kilopascals and stored-liquid annual average true vapor pressure greater than or equal to 8.3 kilopascals and annual average HAP liquid concentration greater than 4 percent by weight total organic HAP; a storage vessel at a new source that has a design storage capacity greater than or equal to 151 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 3.4 kilopascals and annual average HAP liquid concentration greater than 2 percent by weight total organic HAP; or a storage vessel at a new source that has a design storage capacity greater than or equal to 76 cubic meters and less than 151 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 77 kilopascals and annual average HAP liquid concentration greater than 2 percent by weight total organic HAP.

Group 1 wastewater stream means a wastewater stream at a petroleum refinery with a total annual benzene loading of 10 megagrams per year or greater as calculated according to the procedures in 40 CFR 61.342 of subpart FF of part 61 that has a flow rate of 0.02 liters per minute or greater, a benzene concentration of 10 parts per million by weight or greater, and is not exempt from control requirements under the provisions of 40 CFR part 61, subpart FF.

Group 2 gasoline loading rack means a gasoline loading rack classified under Standard Industrial Classification code 2911 that does not meet the definition of a Group 1 gasoline loading rack.

Group 2 marine tank vessel means a marine tank vessel that does not meet the definition of a Group 1 marine tank vessel.

Group 2 miscellaneous process vent means a miscellaneous process vent that does not meet the definition of a Group 1 miscellaneous process vent.

Group 2 storage vessel means a storage vessel that does not meet the definition of a Group 1 storage vessel.

Group 2 wastewater stream means a wastewater stream that does not meet the definition of Group 1 wastewater stream.

Hazardous air pollutant or *HAP* means one of the chemicals listed in section 112(b) of the Clean Air Act.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.593(d) of part 60, subpart GGG.

In organic hazardous air pollutant service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of § 63.180(d) of subpart H of this part and table 1 of this subpart. The provisions of § 63.180(d) of subpart H also specify how to determine that a piece of equipment is not in organic HAP service.

Leakless valve means a valve that has no external actuating mechanism.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the stored liquid at the temperature equal to the highest calendar-month average of the liquid storage temperature for liquids stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored at the ambient temperature, as determined:

- (1) In accordance with methods specified in § 63.111 of subpart G of this part;
- (2) From standard reference texts; or
- (3) By any other method approved by the Administrator.

Miscellaneous process vent means a gas stream containing greater than 20 parts per million by volume organic HAP that is continuously or periodically discharged during normal operation of a petroleum refining process unit meeting the criteria specified in § 63.640(a). Miscellaneous process vents include gas streams that are discharged directly to the atmosphere, gas streams that are routed to a control device prior to discharge to the atmosphere, or gas streams that are diverted through a product recovery device prior to control or discharge to the atmosphere. Miscellaneous process vents include vent streams from: caustic wash accumulators, distillation tower condensers/accumulators, flash/knockout drums, reactor vessels, scrubber overheads, stripper overheads, vacuum (steam) ejectors, wash tower overheads, water wash accumulators, blowdown condensers/accumulators, and delayed coker vents. Miscellaneous process vents do not include:

- (1) Gaseous streams routed to a fuel gas system;
- (2) Relief valve discharges;
- (3) Leaks from equipment regulated under § 63.648;
- (4) Episodic or nonroutine releases such as those associated with startup, shutdown, malfunction, maintenance, depressuring, and catalyst transfer operations;
- (5) In situ sampling systems (onstream analyzers);
- (6) Catalytic cracking unit catalyst regeneration vents;
- (7) Catalytic reformer regeneration vents;

(8) Sulfur plant vents;

(9) Vents from control devices such as scrubbers, boilers, incinerators, and electrostatic precipitators applied to catalytic cracking unit catalyst regeneration vents, catalytic reformer regeneration vents, and sulfur plant vents;

(10) Vents from any stripping operations applied to comply with the wastewater provisions of this subpart, subpart G of this part, or 40 CFR part 61, subpart FF;

(11) Coking unit vents associated with coke drum depressuring at or below a coke drum outlet pressure of 15 pounds per square inch gauge, deheading, draining, or decoking (coke cutting) or pressure testing after decoking;

(12) Vents from storage vessels;

(13) Emissions from wastewater collection and conveyance systems including, but not limited to, wastewater drains, sewer vents, and sump drains; and

(14) Hydrogen production plant vents through which carbon dioxide is removed from process streams or through which steam condensate produced or treated within the hydrogen plant is degassed or deaerated.

Operating permit means a permit required by 40 CFR parts 70 or 71.

Organic hazardous air pollutant or organic HAP in this subpart, means any of the organic chemicals listed in table 1 of this subpart.

Petroleum-based solvents means mixtures of aliphatic hydrocarbons or mixtures of one and two ring aromatic hydrocarbons.

Periodically discharged means discharges that are intermittent and associated with routine operations. Discharges associated with maintenance activities or process upsets are not considered periodically discharged miscellaneous process vents and are therefore not regulated by the petroleum refinery miscellaneous process vent provisions.

Petroleum refining process unit means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911), and used primarily for the following:

(1) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants;

(2) Separating petroleum; or

(3) Separating, cracking, reacting, or reforming intermediate petroleum streams.

(4) Examples of such units include, but are not limited to, petroleum-based solvent units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Petroleum refining process units also include sulfur plants.

Plant site means all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Primary fuel means the fuel that provides the principal heat input (i.e., more than 50 percent) to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means an enclosed combustion device that primarily transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process unit means the equipment assembled and connected by pipes or ducts to process raw and/or intermediate materials and to manufacture an intended product. A process unit includes any associated storage vessels. For the purpose of this subpart, process unit includes, but is not limited to, chemical manufacturing process units and petroleum refining process units.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety

constraints and during which repairs can be accomplished. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not considered a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, or would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown is not considered a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not considered process unit shutdowns.

Recovery device means an individual unit of equipment capable of and used for the purpose of recovering chemicals for use, reuse, or sale. Recovery devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

Reference control technology for gasoline loading racks means a vapor collection and processing system used to reduce emissions due to the loading of gasoline cargo tanks to 10 milligrams of total organic compounds per liter of gasoline loaded or less.

Reference control technology for marine vessels means a vapor collection system and a control device that reduces captured HAP emissions by 97 percent.

Reference control technology for miscellaneous process vents means a combustion device used to reduce organic HAP emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

Reference control technology for storage vessels means either:

(1) An internal floating roof meeting the specifications of § 63.119(b) of subpart G except for § 63.119 (b)(5) and (b)(6);

(2) An external floating roof meeting the specifications of § 63.119(c) of subpart G except for § 63.119(c)(2);

(3) An external floating roof converted to an internal floating roof meeting the specifications of § 63.119(d) of subpart G except for § 63.119(d)(2); or

(4) A closed-vent system to a control device that reduces organic HAP emissions by 95-percent, or to an outlet concentration of 20 parts per million by volume.

(5) For purposes of emissions averaging, these four technologies are considered equivalent.

Reference control technology for wastewater means the use of:

(1) Controls specified in §§61.343 through 61.347 of subpart FF of part 61;

(2) A treatment process that achieves the emission reductions specified in table 7 of this subpart for each individual HAP present in the wastewater stream or is a steam stripper that meets the specifications in §63.138(g) of subpart G of this part; and

(3) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices) the organic HAP emissions in the vapor streams vented from treatment processes (including the steam stripper described in paragraph (2) of this definition) managing wastewater.

Refinery fuel gas means a gaseous mixture of methane, light hydrocarbons, hydrogen, and other miscellaneous species (nitrogen, carbon dioxide, hydrogen sulfide, etc.) that is produced in the refining of crude oil and/or petrochemical processes and that is separated for use as a fuel in boilers and process heaters throughout the refinery.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

Research and development facility means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

Shutdown means the cessation of a petroleum refining process unit or a unit operation (including, but not limited to, a distillation unit or reactor) within a petroleum refining process unit for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair.

Startup means the setting into operation of a petroleum refining process unit for purposes of production. Startup does not include operation solely for purposes of testing equipment. Startup does not include changes in product for flexible operation units.

Storage vessel means a tank or other vessel that is used to store organic liquids. Storage vessel does not include:

(1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;

(3) Vessels with capacities smaller than 40 cubic meters;

(4) Bottoms receiver tanks; or

(5) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

Temperature monitoring device means a unit of equipment used to monitor temperature and having an accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius or ± 0.5 °C, whichever is greater.

Total annual benzene means the total amount of benzene in waste streams at a facility on an annual basis as determined in §61.342 of 40 CFR part 61, subpart FF.

Total organic compounds or *TOC*, as used in this subpart, means those compounds excluding methane and ethane measured according to the procedures of Method 18 of 40 CFR part 60, appendix A. Method 25A may be used alone or in combination with Method 18 to measure TOC as provided in §63.645 of this subpart.

Wastewater means water or wastewater that, during production or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product and is discharged into any individual drain system. Examples are feed tank drawdown; water formed

during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29879, June 12, 1996; 62 FR 7938, Feb. 21, 1997; 63 FR 31361, June 9, 1998]

EFFECTIVE DATE NOTE: At 63 FR 31361, June 9, 1998, § 63.641, was amended by revising paragraphs (11) through (13) and adding paragraph (14) to the definition of “*miscellaneous process vent*”, effective Aug. 18, 1998. For the convenience of the user, the superseded text is set forth as follows:

§ 63.641 Definitions.

* * * * *

Miscellaneous process vent * * *

(11) Coking unit vents associated with coke drum depressuring at or below a coke drum outlet pressure of 15 pounds per square inch gauge, deheading, draining, or decoking (coke cutting) or pressure testing after decoking; and

(12) Vents from storage vessels.

(13) Emissions from wastewater collection and conveyance systems including, but not limited to, wastewater drains, sewer vents, and sump drains.

* * * * *

§ 63.642 General standards.

(a) Each owner or operator of a source subject to this subpart is required to apply for a part 70 or part 71 operating permit from the appropriate permitting authority. If the EPA has approved a State operating permit program under part 70, the permit shall be obtained from the State authority. If the State operating permit program has not been approved, the source shall apply to the EPA Regional Office pursuant to part 71.

(b) [Reserved]

(c) Table 6 of this subpart specifies the provisions of subpart A of this part that apply and those that do not apply to owners and operators of sources subject to this subpart.

(d) Initial performance tests and initial compliance determinations shall be required only as specified in this subpart.

(1) Performance tests and compliance determinations shall be conducted according to the schedule and procedures specified in this subpart.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 days before the performance test is scheduled.

(3) Performance tests shall be conducted according to the provisions of § 63.7(e) except that performance tests shall be conducted at maximum representative operating capacity for the process. During the performance test, an owner or operator shall operate the control device at either maximum or minimum representative operating conditions for monitored control device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable section or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(e) Each owner or operator of a source subject to this subpart shall keep copies of all applicable reports and records required by this subpart for at least 5 years except as otherwise specified in this subpart. All applicable records shall be maintained in such a manner that they can be readily accessed within 24 hours. Records may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

(f) All reports required under this subpart shall be sent to the Administrator at the addresses listed in § 63.13 of subpart A of this part. If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(g) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the following equation:

$$E_A = 0.02 \sum EPV_1 + \sum EPV_2 + 0.05 \sum ES_1 + \sum ES_2 + \sum EGLR_{1C} + \sum EGLR_2 + (R) \sum EMV_1 + \sum EMV_2 + \sum EWW_{1C} + \sum EWW_2$$

where:

E_A = Emission rate, megagrams per year, allowed for the source.

$0.02\sum EPV_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 miscellaneous process vents, as defined in § 63.641.

$\sum EPV_2$ = Sum of the emissions, megagrams per year, from all Group 2 process vents, as defined in § 63.641.

$0.05\sum ES_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in § 63.641.

$\sum ES_2$ = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in § 63.641.

$\sum EGLR_{1C}$ = Sum of the residual emissions, megagrams per year, from all Group 1 gasoline loading racks, as defined in § 63.641.

$\sum EGLR_2$ = Sum of the emissions, megagrams per year, from all Group 2 gasoline loading racks, as defined in § 63.641.

$(R)\sum EMV_1$ = Sum of the residual emissions megagrams per year, from all Group 1 marine tank vessels, as defined in § 63.641.

R = 0.03 for existing sources, 0.02 for new sources.

$\sum EMV_2$ = Sum of the emissions, megagrams per year from all Group 2 marine tank vessels, as defined in § 63.641.

$\sum EWW_{1C}$ = Sum of the residual emissions from all Group 1 wastewater streams, as defined in § 63.641. This term is calculated for each Group 1 stream according to the equation for EWW_{1C} in § 63.652(h)(6).

$\sum EWW_2$ = Sum of emissions from all Group 2 wastewater streams, as defined in § 63.641.

The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point change or as the number of emission points in the source changes.

(h) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (g) of this section.

(i) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (g) of this section by following the procedures specified in paragraph (k) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (l) of this section for specified emission points and the procedures specified in paragraph (k) of this section for all other emission points within the source.

(j) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (h) of this section only by following the procedures in paragraph (k) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.

(k) The owner or operator of an existing source may comply, and the owner or operator of a new source shall comply, with the miscellaneous process vent provisions in §§ 63.643 through 63.645, the storage vessel provisions in § 63.646, the wastewater provisions in § 63.647, the gasoline loading rack provisions in § 63.650, and the marine tank vessel loading operation provisions in § 63.651 of this subpart.

(1) The owner or operator using this compliance approach shall also comply with the requirements of § 63.654 as applicable.

(2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (g) of this section.

(l) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under §§ 63.643 through 63.647, §§ 63.650 and 63.651 by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (g) of this section. The owner or operator using emissions averaging shall meet the requirements in paragraphs (l)(1) and (l)(2) of this section.

(1) Calculate emission debits and credits for those emission points involved in the emissions average according to the procedures specified in § 63.652; and

(2) Comply with the requirements of §§ 63.652, 63.653, and 63.654, as applicable.

(m) A State may restrict the owner or operator of an existing source to using only the procedures in paragraph (k) of this section to comply with the emission standard in paragraph (g) of this section. Such a restriction would preclude the source from using an emissions averaging compliance approach.

[60 FR 43260, Aug. 18, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29879, June 12, 1996]

§ 63.643 Miscellaneous process vent provisions.

(a) The owner or operator of a Group 1 miscellaneous process vent as defined in § 63.641 shall comply with the requirements of either paragraphs (a)(1) or (a)(2) of this section.

(1) Reduce emissions of organic HAP's using a flare that meets the requirements of § 63.11(b) of subpart A of this part.

(2) Reduce emissions of organic HAP's, using a control device, by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. Compliance can be determined by measuring either organic HAP's or TOC's using the procedures in § 63.645.

(b) If a boiler or process heater is used to comply with the percentage of reduction requirement or concentration limit specified in paragraph (a)(2) of this section, then the vent stream shall be introduced into the flame zone of such a device, or in a location such that the required percent reduction or concentration is achieved. Testing and monitoring is required only as specified in § 63.644(a) and § 63.645 of this subpart.

§ 63.644 Monitoring provisions for miscellaneous process vents.

(a) Except as provided in paragraph (b) of this section, each owner or operator of a Group 1 miscellaneous process vent that uses a combustion device to comply with the requirements in

§ 63.643(a) shall install the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, depending on the type of combustion device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, an ultraviolet beam sensor, or an infrared sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from monitoring.

(4) Any boiler or process heater less than 44 megawatts design heat capacity where the vent stream is not introduced into the flame zone is required to use a temperature monitoring device in the firebox equipped with a continuous recorder.

(b) An owner or operator of a Group 1 miscellaneous process vent may request approval to monitor parameters other than those listed in paragraph (a) of this section. The request shall be submitted according to the procedures specified in § 63.654(h). Approval shall be requested if the owner or operator:

(1) Uses a control device other than an incinerator, boiler, process heater, or flare; or

(2) Uses one of the control devices listed in paragraph (a) of this section, but seeks to monitor a parameter other than those specified in paragraph (a) of this section.

(c) The owner or operator of a Group 1 miscellaneous process vent using a vent system that contains bypass lines that could divert a vent stream away from the control device used to comply with paragraph (a) of this section shall comply with either paragraph (c)(1) or (c)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, pressure relief valves needed for safety reasons, and equipment subject to § 63.648 are not subject to this paragraph.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether a vent stream flow is present at least once every hour. Records shall be generated as specified in § 63.654(h) and (i). The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(d) The owner or operator shall establish a range that ensures compliance with the emissions standard for each parameter monitored under paragraphs (a) and (b) of this section. In order to establish the range, the information required in § 63.654(f)(3) shall be submitted in the Notification of Compliance Status report.

(e) Each owner or operator of a control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum and/or maximum operating parameter value or procedure required to be monitored under paragraphs (a) and (b) of this section. Operation of the control device in a manner that constitutes a period of excess emissions, as defined in § 63.654(g)(6), or failure to perform procedures required by this section shall constitute a violation of the applicable emission standard of this subpart.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§ 63.645 Test methods and procedures for miscellaneous process vents.

(a) To demonstrate compliance with § 63.643, an owner or operator shall follow § 63.116 except for § 63.116 (a)(1), (d) and (e) of subpart G of this part except as provided in paragraphs (b) through (d) and paragraph (i) of this section.

(b) All references to § 63.113(a)(1) or (a)(2) in § 63.116 of subpart G of this part shall be replaced with § 63.643(a)(1) or (a)(2), respectively.

(c) In § 63.116(c)(4)(ii)(C) of subpart G of this part, organic HAP's in the list of HAP's in table 1 of this subpart shall be considered instead of the organic HAP's in table 2 of subpart F of this part.

(d) All references to § 63.116(b)(1) or (b)(2) shall be replaced with paragraphs (d)(1) and (d)(2) of this section, respectively.

(1) Any boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) Any boiler or process heater in which all vent streams are introduced into the flame zone.

(e) For purposes of determining the TOC emission rate, as specified under paragraph (f) of this section, the sampling site shall be after the last product recovery device (as defined in § 63.641 of this subpart) (if any recovery devices are present) but prior to the inlet of any control device (as defined in § 63.641 of this subpart) that is present, prior to any dilution of the process vent stream, and prior to release to the atmosphere.

(1) Methods 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(f) Except as provided in paragraph (g) of this section, an owner or operator seeking to demonstrate that a process vent TOC mass flow rate is less than 33 kilograms per day for an existing source or less than 6.8 kilograms per day for a new source in accordance with the Group 2 process vent definition of this subpart shall determine the TOC mass flow rate by the following procedures:

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(1) The sampling site shall be selected as specified in paragraph (e) of this section.

(2) The gas volumetric flow rate shall be determined using Methods 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used. If Method 25A is used, and the TOC mass flow rate calculated from the Method 25A measurement is greater than or equal to 33 kilograms per day for an existing source or 6.8 kilograms per day for a new source, Method 18 may be used to determine any non-VOC hydrocarbons that may be deducted to calculate the TOC (minus non-VOC hydrocarbons) concentration and mass flow rate. The following procedures shall be used to calculate parts per million by volume concentration:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation if Method 18 is used:

$$C_{\text{TOC}} = \frac{\sum_{i=1}^x \left(\sum_{j=1}^n C_{ji} \right)}{X}$$

where:

C_{TOC} =Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

C_{ji} =Concentration of sample component j of the sample i, dry basis, parts per million by volume.

n=Number of components in the sample.

x=Number of samples in the sample run.

(4) The emission rate of TOC (minus methane and ethane) (E_{TOC}) shall be calculated using the following equation if Method 18 is used:

$$E = K_2 \left[\sum_{j=1}^n C_j M_j \right] Q_s$$

where:

E=Emission rate of TOC (minus methane and ethane) in the sample, kilograms per day.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where the standard temperature (standard cubic meter) is at 20 °C.

C_j =Concentration on a dry basis of organic compound j in parts per million as measured by Method 18 of 40 CFR part 60, appendix A, as indicated in paragraph (f)(3) of this section. C_j includes all organic compounds measured minus methane and ethane.

M_j =Molecular weight of organic compound j, gram per gram-mole.

Q_s =Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 °C.

(5) If Method 25A is used the emission rate of TOC (E_{TOC}) shall be calculated using the following equation:

$$E = K_2 C_{\text{TOC}} Q_s$$

where:

E=Emission rate of TOC (minus methane and ethane) in the sample, kilograms per day.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where the standard temperature (standard cubic meter) is at 20 °C.

C_{TOC} =Concentration of TOC on a dry basis in parts per million volume as measured by Method 25A of 40 CFR part 60, appendix A, as indicated in paragraph (f)(3) of this section.

Q_s =Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 °C.

(g) Engineering assessment may be used to determine the TOC emission rate for the representative operating

condition expected to yield the highest daily emission rate.

(1) Engineering assessment includes, but is not limited to, the following:

(i) Previous test results provided the tests are representative of current operating practices at the process unit.

(ii) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(iii) TOC emission rate specified or implied within a permit limit applicable to the process vent.

(iv) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(A) Use of material balances based on process stoichiometry to estimate maximum TOC concentrations;

(B) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities; and

(C) Estimation of TOC concentrations based on saturation conditions.

(v) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(h) The owner or operator of a Group 2 process vent shall recalculate the TOC emission rate for each process vent, as necessary, whenever process changes are made to determine whether the vent is in Group 1 or Group 2. Examples of process changes include, but are not limited to, changes in production capacity, production rate, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: process upsets; unintentional, temporary process changes; and changes that are within the range on which the original calculation was based.

(1) The TOC emission rate shall be recalculated based on measurements of vent stream flow rate and TOC as specified in paragraphs (e) and (f) of this section, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (g) of this section.

(2) Where the recalculated TOC emission rate is greater than 33 kilograms per day for an existing source or greater than 6.8 kilograms per day for a new source, the owner or operator shall submit a report as specified in § 63.654 (f), (g), or (h) and shall comply with the appropriate provisions in § 63.643 by the dates specified in § 63.640.

(i) A compliance determination for visible emissions shall be conducted within 150 days of the compliance date using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§ 63.646 Storage vessel provisions.

(a) Each owner or operator of a Group 1 storage vessel subject to this subpart shall comply with the requirements of §§ 63.119 through 63.121 except as provided in paragraphs (b) through (l) of this section.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in 40 CFR part 63, subparts A or G. The Group 1 storage vessel definition presented in § 63.641 shall apply in lieu of the Group 1 storage vessel definitions presented in tables 5 and 6 of § 63.119 of subpart G of this part.

(1) An owner or operator may use good engineering judgement or test results to determine the stored liquid weight percent total organic HAP for purposes of group determination. Data, assumptions, and procedures used in the determination shall be documented.

(2) When an owner or operator and the Administrator do not agree on whether the annual average weight percent organic HAP in the stored liquid is above or below 4 percent for a storage vessel at an existing source or above or below 2 percent for a storage vessel at a new source, Method 18 of 40 CFR part 60, appendix A shall be used.

(c) The following paragraphs do not apply to storage vessels at existing sources subject to this subpart: § 63.119 (b)(5), (b)(6), (c)(2), and (d)(2).

(d) References shall apply as specified in paragraphs (d)(1) through (d)(10) of this section.

(1) All references to § 63.100(k) of subpart F of this part (or the schedule provisions and the compliance date) shall be replaced with § 63.640(h),

(2) All references to April 22, 1994 shall be replaced with August 18, 1995.

(3) All references to December 31, 1992 shall be replaced with July 15, 1994.

(4) All references to the compliance dates specified in § 63.100 of subpart F shall be replaced with § 63.640 (h) through (m).

(5) All references to § 63.150 in § 63.119 of subpart G of this part shall be replaced with § 63.652.

(6) All references to § 63.113(a)(2) of subpart G shall be replaced with § 63.643(a)(2) of this subpart.

(7) All references to § 63.126(b)(1) of subpart G shall be replaced with § 63.422(b) of subpart R of this part.

(8) All references to § 63.128(a) of subpart G shall be replaced with § 63.425, paragraphs (a) through (c) and (e) through (h) of subpart R of this part.

(9) All references to § 63.139(d)(1) in § 63.120(d)(1)(ii) of subpart G are not applicable. For sources subject to this subpart, such references shall mean that 40 CFR 61.355 is applicable.

(10) All references to § 63.139(c) in § 63.120(d)(1)(ii) of subpart G are not applicable. For sources subject to this subpart, such references shall mean that § 63.647 of this subpart is applicable.

(e) When complying with the inspection requirements of § 63.120 of subpart G of this part, owners and operators of storage vessels at existing sources subject to this subpart are not required to comply with the provisions for gaskets, slotted membranes, and sleeve seals.

(f) The following paragraphs (f)(1), (f)(2), and (f)(3) of this section apply to Group 1 storage vessels at existing sources:

(1) If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access.

(2) Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(3) Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being

floated off or is being landed on the roof leg supports.

(g) Failure to perform inspections and monitoring required by this section shall constitute a violation of the applicable standard of this subpart.

(h) References in §§ 63.119 through 63.121 to § 63.122(g)(1), § 63.151, and references to initial notification requirements do not apply.

(i) References to the Implementation Plan in § 63.120, paragraphs (d)(2) and (d)(3)(i) shall be replaced with the Notification of Compliance Status report.

(j) References to the Notification of Compliance Status report in § 63.152(b) shall be replaced with § 63.654(f).

(k) References to the Periodic Reports in § 63.152(c) shall be replaced with § 63.654(g).

(l) The State or local permitting authority can waive the notification requirements of §§ 63.120(a)(5), 63.120(a)(6), 63.120(b)(10)(ii), and 63.120(b)(10)(iii) for all or some storage vessels at petroleum refineries subject to this subpart. The State or local permitting authority may also grant permission to refill storage vessels sooner than 30 days after submitting the notifications in §§ 63.120(a)(6) or 63.120(b)(10)(iii) for all storage vessels at a refinery or for individual storage vessels on a case-by-case basis.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996; 62 FR 7939, Feb. 21, 1997]

§ 63.647 Wastewater provisions.

(a) Except as provided in paragraph (b) of this section, each owner or operator of a Group 1 wastewater stream shall comply with the requirements of §§ 61.340 through 61.355 of 40 CFR part 61, subpart FF for each process wastewater stream that meets the definition in § 63.641.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in the Clean Air Act or in 40 CFR part 61, subpart FF, § 61.341.

(c) Each owner or operator required under subpart FF of 40 CFR part 61 to perform periodic measurement of benzene concentration in wastewater, or to monitor process or control device operating parameters shall operate in a manner consistent with the minimum

or maximum (as appropriate) permitted concentration or operating parameter values. Operation of the process, treatment unit, or control device resulting in a measured concentration or operating parameter value outside the permitted limits shall constitute a violation of the emission standards. Failure to perform required leak monitoring for closed vent systems and control devices or failure to repair leaks within the time period specified in subpart FF of 40 CFR part 61 shall constitute a violation of the standard.

§ 63.648 Equipment leak standards.

(a) Each owner or operator of an existing source subject to the provisions of this subpart shall comply with the provisions of 40 CFR part 60 subpart VV and paragraph (b) of this section except as provided in paragraphs (a)(1), (a)(2), and (c) through (i) of this section. Each owner or operator of a new source subject to the provisions of this subpart shall comply with subpart H of this part except as provided in paragraphs (c) through (i) of this section.

(1) For purposes of compliance with this section, the provisions of 40 CFR part 60, subpart VV apply only to equipment in organic HAP service, as defined in § 63.641 of this subpart.

(2) Calculation of percentage leaking equipment components for subpart VV of 40 CFR part 60 may be done on a process unit basis or a sourcewide basis. Once the owner or operator has decided, all subsequent calculations shall be on the same basis unless a permit change is made.

(b) The use of monitoring data generated before August 18, 1995 to qualify for less frequent monitoring of valves and pumps as provided under 40 CFR part 60 subpart VV or subpart H of this part and paragraph (c) of this section (i.e., quarterly or semiannually) is governed by the requirements of paragraphs (b)(1) and (b)(2) of this section.

(1) Monitoring data must meet the test methods and procedures specified in § 60.485(b) of 40 CFR part 60, subpart VV or § 63.180(b)(1) through (b)(5) of subpart H of this part except for minor departures.

(2) Departures from the criteria specified in § 60.485(b) of 40 CFR part 60 subpart VV or § 63.180(b)(1) through (b)(5)

of subpart H of this part or from the monitoring frequency specified in subpart VV or in paragraph (c) of this section (such as every 6 weeks instead of monthly or quarterly) are minor and do not significantly affect the quality of the data. An example of a minor departure is monitoring at a slightly different frequency (such as every 6 weeks instead of monthly or quarterly). Failure to use a calibrated instrument is not considered a minor departure.

(c) In lieu of complying with the existing source provisions of paragraph (a) in this section, an owner or operator may elect to comply with the requirements of §§ 63.161 through 63.169, 63.171, 63.172, 63.175, 63.176, 63.177, 63.179, and 63.180 of subpart H of this part except as provided in paragraphs (c)(1) through (c)(10) and (e) through (i) of this section.

(1) The instrument readings that define a leak for light liquid pumps subject to § 63.163 of subpart H of this part and gas/vapor and light liquid valves subject to § 63.168 of subpart H of this part are specified in table 2 of this subpart.

(2) In phase III of the valve standard, the owner or operator may monitor valves for leaks as specified in paragraphs (c)(2)(i) or (c)(2)(ii) of this section.

(i) If the owner or operator does not elect to monitor connectors, then the owner or operator shall monitor valves according to the frequency specified in table 8 of this subpart.

(ii) If an owner or operator elects to monitor connectors according to the provisions of § 63.649, paragraphs (b), (c), or (d), then the owner or operator shall monitor valves at the frequencies specified in table 9 of this subpart.

(3) The owner or operator shall decide no later than the first required monitoring period after the phase I compliance date specified in § 63.640(h) whether to calculate the percentage leaking valves on a process unit basis or on a sourcewide basis. Once the owner or operator has decided, all subsequent calculations shall be on the same basis unless a permit change is made.

(4) The owner or operator shall decide no later than the first monitoring period after the phase III compliance date specified in § 63.640(h) whether to

monitor connectors according to the provisions in § 63.649, paragraphs (b), (c), or (d).

(5) Connectors in gas/vapor service or light liquid service are subject to the requirements for connectors in heavy liquid service in § 63.169 of subpart H of this part (except for the agitator provisions). The leak definition for valves, connectors, and instrumentation systems subject to § 63.169 is 1,000 parts per million.

(6) In phase III of the pump standard, except as provided in paragraph (c)(7) of this section, owners or operators that achieve less than 10 percent of light liquid pumps leaking or three light liquid pumps leaking, whichever is greater, shall monitor light liquid pumps monthly.

(7) Owners or operators that achieve less than 3 percent of light liquid pumps leaking or one light liquid pump leaking, whichever is greater, shall monitor light liquid pumps quarterly.

(8) An owner or operator may make the election described in paragraphs (c)(3) and (c)(4) of this section at any time except that any election to change after the initial election shall be treated as a permit modification according to the terms of part 70 of this chapter.

(9) When complying with the requirements of § 63.168(e)(3)(i), non-repairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and non-repairable. Otherwise, a number of non-repairable valves up to a maximum of 1 percent per year of the total number of valves in organic HAP service up to a maximum of 3 percent may be excluded from calculation of percent leaking valves for subsequent monitoring periods. When the number of non-repairable valves exceeds 3 percent of the total number of valves in organic HAP service, the number of non-repairable valves exceeding 3 percent of the total number shall be included in the calculation of percent leaking valves.

(10) If in phase III of the valve standard any valve is designated as being leakless, the owner or operator has the option of following the provisions of 40 CFR 60.482-7(f). If an owner or operator chooses to comply with the provisions

of 40 CFR 60.482-7(f), the valve is exempt from the valve monitoring provisions of § 63.168 of subpart H of this part.

(d) Upon startup of new sources, the owner or operator shall comply with § 63.163(a)(1)(ii) of subpart H of this part for light liquid pumps and § 63.168(a)(1)(ii) of subpart H of this part for gas/vapor and light liquid valves.

(e) For reciprocating pumps in heavy liquid service, owners and operators are not required to comply with the requirements in § 63.169 of subpart H of this part.

(f) Reciprocating pumps in light liquid service are exempt from §§ 63.163 and 60.482 if recasting the distance piece or reciprocating pump replacement is required.

(g) Compressors in hydrogen service are exempt from the requirements of paragraphs (a) and (c) of this section if an owner or operator demonstrates that a compressor is in hydrogen service.

(1) Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service.

(2) For a piece of equipment to be considered in hydrogen service, it must be determined that the percentage hydrogen content can be reasonably expected always to exceed 50 percent by volume.

(i) For purposes of determining the percentage hydrogen content in the process fluid that is contained in or contacts a compressor, the owner or operator shall use either:

(A) Procedures that conform to those specified in § 60.593(b)(2) of 40 part 60, subpart GGG.

(B) Engineering judgment to demonstrate that the percentage content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume.

(f) When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, the procedures in paragraph (g)(2)(i)(A) of this section shall be used to resolve the disagreement.

(2) If an owner or operator determines that a piece of equipment is in

hydrogen service, the determination can be revised only by following the procedures in paragraph (g)(2)(i)(A) of this section.

(h) Each owner or operator of a source subject to the provisions of this subpart must maintain all records for a minimum of 5 years.

(i) Reciprocating compressors are exempt from seal requirements if recasting the distance piece or compressor replacement is required.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§ 63.649 Alternative means of emission limitation: Connectors in gas/vapor service and light liquid service.

(a) If an owner or operator elects to monitor valves according to the provisions of § 63.648(c)(2)(ii), the owner or operator shall implement one of the connector monitoring programs specified in paragraphs (b), (c), or (d) of this section.

(b) *Random 200 connector alternative.* The owner or operator shall implement a random sampling program for accessible connectors of 2.0 inches nominal diameter or greater. The program does not apply to inaccessible or unsafe-to-monitor connectors, as defined in § 63.174 of subpart H. The sampling program shall be implemented source-wide.

(1) Within the first 12 months after the phase III compliance date specified in § 63.640(h), a sample of 200 connectors shall be randomly selected and monitored using Method 21 of 40 CFR part 60, appendix A.

(2) The instrument reading that defines a leak is 1,000 parts per million.

(3) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected except as provided in paragraph (e) of this section. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(4) If a leak is detected, the connector shall be monitored for leaks within the first 3 months after its repair.

(5) After conducting the initial survey required in paragraph (b)(1) of this section, the owner or operator shall conduct subsequent monitoring of connectors at the frequencies specified in

paragraphs (b)(5)(i) through (b)(5)(iv) of this section.

(i) If the percentage leaking connectors is 2.0 percent or greater, the owner or operator shall survey a random sample of 200 connectors once every 6 months.

(ii) If the percentage leaking connectors is 1.0 percent or greater but less than 2.0 percent, the owner or operator shall survey a random sample of 200 connectors once per year.

(iii) If the percentage leaking connectors is 0.5 percent or greater but less than 1.0 percent, the owner or operator shall survey a random sample of 200 connectors once every 2 years.

(iv) If the percentage leaking connectors is less than 0.5 percent, the owner or operator shall survey a random sample of 200 connectors once every 4 years.

(6) Physical tagging of the connectors to indicate that they are subject to the monitoring provisions is not required. Connectors may be identified by the area or length of pipe and need not be individually identified.

(c) *Connector inspection alternative.* The owner or operator shall implement a program to monitor all accessible connectors in gas/vapor service that are 2.0 inches (nominal diameter) or greater and inspect all accessible connectors in light liquid service that are 2 inches (nominal diameter) or greater as described in paragraphs (c)(1) through (c)(7) of this section. The program does not apply to inaccessible or unsafe-to-monitor connectors.

(1) Within 12 months after the phase III compliance date specified in § 63.640(h), all connectors in gas/vapor service shall be monitored using Method 21 of 40 CFR part 60 appendix A. The instrument reading that defines a leak is 1,000 parts per million.

(2) All connectors in light liquid service shall be inspected for leaks. A leak is detected if liquids are observed to be dripping at a rate greater than three drops per minute.

(3) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected except as provided in paragraph (e) of this section. A first attempt at repair shall be made no later

than 5 calendar days after the leak is detected.

(4) If a leak is detected, connectors in gas/vapor service shall be monitored for leaks within the first 3 months after repair. Connectors in light liquid service shall be inspected for indications of leaks within the first 3 months after repair. A leak is detected if liquids are observed to be dripping at a rate greater than three drops per minute.

(5) After conducting the initial survey required in paragraphs (c)(1) and (c)(2) of this section, the owner or operator shall conduct subsequent monitoring at the frequencies specified in paragraphs (c)(5)(i) through (c)(5)(iii) of this section.

(i) If the percentage leaking connectors is 2.0 percent or greater, the owner or operator shall monitor or inspect, as applicable, the connectors once per year.

(ii) If the percentage leaking connectors is 1.0 percent or greater but less than 2.0 percent, the owner or operator shall monitor or inspect, as applicable, the connectors once every 2 years.

(iii) If the percentage leaking connectors is less than 1.0 percent, the owner or operator shall monitor or inspect, as applicable, the connectors once every 4 years.

(6) The percentage leaking connectors shall be calculated for connectors in gas/vapor service and for connectors in light liquid service. The data for the two groups of connectors shall not be pooled for the purpose of determining the percentage leaking connectors.

(i) The percentage leaking connectors shall be calculated as follows:

$$\% C_L = [(C_L - C_{AN}) / C_t + C_c] \times 100$$

where:

$\% C_L$ = Percentage leaking connectors.

C_L = Number of connectors including nonreparables, measured at 1,000 parts per million or greater, by Method 21 of 40 CFR part 60, Appendix A.

C_{AN} = Number of allowable nonreparable connectors, as determined by monitoring, not to exceed 3 percent of the total connector population, C_t .

C_t = Total number of monitored connectors, including nonreparables, in the process unit.

C_c = Optional credit for removed connectors = $0.67 \times$ net number (i.e., the total number of connectors removed minus the total added) of connectors in organic HAP service removed from the process unit after the applicability date set forth in § 63.640(h)(4)(iii) for existing process units, and after the date of start-up for new process units. If credits are not taken, then $C_c = 0$.

(ii) Nonreparable connectors shall be included in the calculation of percentage leaking connectors the first time the connector is identified as leaking and nonreparable. Otherwise, a number of nonreparable connectors up to a maximum of 1 percent per year of the total number of connectors in organic HAP service up to a maximum of 3 percent may be excluded from calculation of percentage leaking connectors for subsequent monitoring periods.

(iii) If the number of nonreparable connectors exceeds 3 percent of the total number of connectors in organic HAP service, the number of nonreparable connectors exceeding 3 percent of the total number shall be included in the calculation of the percentage leaking connectors.

(7) Physical tagging of the connectors to indicate that they are subject to the monitoring provisions is not required. Connectors may be identified by the area or length of pipe and need not be individually identified.

(d) *Subpart H program.* The owner or operator shall implement a program to comply with the provisions in § 63.174 of this part.

(e) Delay of repair of connectors for which leaks have been detected is allowed if repair is not technically feasible by normal repair techniques without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

(1) Delay of repair is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

(2) Delay of repair for connectors is also allowed if:

(i) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions

likely to result from delay of repair, and

(ii) When repair procedures are accomplished, the purged material would be collected and destroyed or recovered in a control device.

(f) Any connector that is designated as an unsafe-to-repair connector is exempt from the requirements of paragraphs (b)(3) and (b)(4), (c)(3) and (c)(4), or (d) of this section if:

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b)(3) and (b)(4), (c)(3) and (c)(4), of this section; or

(2) The connector will be repaired before the end of the next scheduled process unit shutdown.

(g) The owner or operator shall maintain records to document that the connector monitoring or inspections have been conducted as required and to document repair of leaking connectors as applicable.

§ 63.650 Gasoline loading rack provisions.

(a) Except as provided in paragraphs (b) through (c) of this section, each owner or operator of a gasoline loading rack classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a petroleum refinery shall comply with subpart R, §§ 63.421, 63.422 (a) through (c), 63.425 (a) through (c), 63.425 (e) through (h), 63.427 (a) and (b), and 63.428 (b), (c), (g)(1), and (h)(1) through (h)(3).

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in subpart A or in 40 CFR part 63, subpart R. The § 63.641 definition of “affected source” applies under this section.

(c) Gasoline loading racks regulated under this subpart are subject to the compliance dates specified in § 63.640(h).

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§ 63.651 Marine tank vessel loading operation provisions.

(a) Except as provided in paragraphs (b) through (c) of this section, each owner or operator of a marine tank

vessel loading operation located at a petroleum refinery shall comply with the requirements of §§ 63.560 through 63.567.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in subpart A or in 40 CFR part 63, subpart Y. The § 63.641 definition of “affected source” applies under this section.

(c) The Initial Notification Report under § 63.567(b) is not required.

(d) The compliance time of 4 years after promulgation of 40 CFR part 63, subpart Y does not apply. The compliance time is specified in § 63.640(h)(3).

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§ 63.652 Emissions averaging provisions.

(a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in § 63.642(g) by using emissions averaging according to § 63.642(l) rather than following the provisions of §§ 63.643 through 63.647, and §§ 63.650 and 63.651. Existing marine tank vessel loading operations unable to comply with the standard by using emissions averaging are those marine tank vessels subject to 40 CFR 63.562(e) of this part and the Valdez Marine Terminal source.

(b) The owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in § 63.653(d) for all points to be included in an emissions average. The Implementation Plan shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in § 63.641) is not applied and all other emission points being controlled as part of the average.

(c) The following emission points can be used to generate emissions averaging credits if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point:

(1) Group 2 emission points;

(2) Group 1 storage vessels, Group 1 wastewater streams, Group 1 gasoline loading racks, Group 1 marine tank

vessels, and Group 1 miscellaneous process vents that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section; and

(3) Emission points from which emissions are reduced by pollution prevention measures. Percentages of reduction for pollution prevention measures shall be determined as specified in paragraph (j) of this section.

(i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990 unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990;

(2) Group 1 emission points that are controlled by a reference control technology unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting only the specifications stated in the reference control technology definition in § 63.641 (i.e., that meets the specifications of

§ 63.119(b) of subpart G but does not have controlled fittings per § 63.119 (b)(5) and (b)(6) of subpart G) applied to a storage vessel is achieving greater than 95 percent control;

(3) Emission points on shutdown process units. Process units that are shut down cannot be used to generate credits or debits;

(4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. Group 1 wastewater streams cannot be left undercontrolled or uncontrolled to generate debits. For the purposes of this section, the terms "wastewater" and "wastewater stream" are used to mean process wastewater; and

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(e) For all points included in an emissions average, the owner or operator shall:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section

may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The initial demonstration in the Implementation Plan that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions.

(ii) After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in § 63.654(g)(8). Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by § 63.654(g)(8)(iii).

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:

(1) More than 20 individual emission points. Where pollution prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.

(2) Periods of startup, shutdown, and malfunction as described in the source's startup, shutdown, and malfunction plan required by § 63.6(e)(3) of subpart A of this part.

(3) For emission points for which continuous monitors are used, periods of excess emissions as defined in § 63.654(g)(6)(i). For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may use the procedures in paragraph (l) of this section to demonstrate to the Administrator that full or partial credits or debits should be assigned.

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the reference control technology, and the emissions allowed for Group 1 emission point. Debits shall be calculated as follows:

(1) The overall equation for calculating sourcewide debits is:

$$\begin{aligned} \text{Debits} = & \sum_{i=1}^n (\text{EPV}_{i\text{ACTUAL}} - (0.02)\text{EPV}_{iu}) + \sum_{i=1}^n (\text{ES}_{i\text{ACTUAL}} - (0.05)\text{ES}_{iu}) + \sum_{i=1}^n (\text{EGLR}_{i\text{ACTUAL}} - \text{EGLR}_{ic}) \\ & + \sum_{i=1}^n (\text{EMV}_{i\text{ACTUAL}} - (0.03)\text{EMV}_{iu}) \end{aligned}$$

where:

Debits and all terms of the equation are in units of megagrams per month, and

$EPV_{iACTUAL}$ =Emissions from each Group 1 miscellaneous process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section.

(0.02) EPV_{iu} =Emissions from each Group 1 miscellaneous process vent i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section.

$ES_{iACTUAL}$ =Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section.

(0.05) ES_{iu} =Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(3) of this section.

$EGLR_{iACTUAL}$ =Emissions from each Group 1 gasoline loading rack i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section.

$EGLR_{ic}$ =Emissions from each Group 1 gasoline loading rack i if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(4) of this section.

EMV_{ACTUAL} =Emissions from each Group 1 marine tank vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section.

(0.03) EMV_{iu} =Emissions from each Group 1 marine tank vessel i if the reference control technology had been applied to the uncontrolled emissions calculated according to paragraph (g)(5) of this section.

n =The number of Group 1 emission points being included in the emissions average. The value of n is not necessarily the same for each kind of emission point.

(2) Emissions from miscellaneous process vents shall be calculated as follows:

(i) For purposes of determining miscellaneous process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for miscellaneous process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A of part 60, appendix A shall be used for selection of the sampling site.

(ii) The following equation shall be used for each miscellaneous process vent i to calculate EPV_{iu} :

$$EPV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right)$$

where:

EPV_{iu} =Uncontrolled process vent emission rate from miscellaneous process vent i , megagrams per month.

Q =Vent stream flow rate, dry standard cubic meters per minute, measured using Methods 2, 2A, 2C, or 2D of part 60 appendix A, as appropriate.

h =Monthly hours of operation during which positive flow is present in the vent, hours per month.

C_j =Concentration, parts per million by volume, dry basis, of organic HAP j as measured by Method 18 of part 60 appendix A.

M_j =Molecular weight of organic HAP j , gram per gram-mole.

n =Number of organic HAP's in the miscellaneous process vent stream.

(A) The values of Q , C_j , and M_j shall be determined during a performance test conducted under representative operating conditions. The values of Q , C_j , and M_j shall be established in the Notification of Compliance Status report and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in

monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q , C_j , and M_j are no longer representative, a new performance test shall be conducted to determine new representative values of Q , C_j , and M_j . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $EPV_{iACTUAL}$:

(A) If the vent is not controlled by a control device or pollution prevention measure, $EPV_{iACTUAL} = EPV_{iu}$, where EPV_{iu} is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

$$EPV_{iACTUAL} = EPV_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) The percent reduction shall be measured according to the procedures in § 63.116 of subpart G if a combustion control device is used. For a flare meeting the criteria in § 63.116(a) of subpart G, or a boiler or process heater meeting the criteria in § 63.645(d) of this subpart or § 63.116(b) of subpart G, the percentage of reduction shall be 98 percent. If a noncombustion control device is used, percentage of reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(2) For determining debits from miscellaneous process vents, product recovery devices shall not be considered control devices and cannot be assigned a percentage of reduction in calculating $EPV_{iACTUAL}$. The sampling site for measurement of uncontrolled emissions is after the final product recovery device.

(3) Procedures for calculating the percentage of reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated as specified in § 63.150(g)(3) of subpart G.

(4) Emissions from gasoline loading racks shall be calculated as follows:

(i) The following equation shall be used for each gasoline loading rack i to calculate $EGLR_{iu}$:

$$EGLR_{iu} = (1.20 \times 10^{-7}) \frac{SPMG}{T}$$

where:

$EGLR_{iu}$ =Uncontrolled transfer HAP emission rate from gasoline loading rack i , megagrams per month

S =Saturation factor, dimensionless (see table 33 of subpart G).

P =Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals.

M =Weighted average molecular weight of organic HAP's transferred at the gasoline loading rack during the month, gram per gram-mole.

G =Monthly volume of gasoline transferred from gasoline loading rack, liters per month.

T =Weighted rack bulk liquid loading temperature during the month, degrees kelvin (degrees Celsius $^{\circ}C + 273$).

(ii) The following equation shall be used for each gasoline loading rack i to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{j=1}^n (P_j)(G_j)}{G}$$

where:

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P_j =Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals.

G =Monthly volume of organic HAP transferred, liters per month, and

$$G = \sum_{j=1}^{j=n} G_j$$

G_j =Monthly volume of individual organic HAP transferred at the gasoline loading rack, liters per month.

n =Number of organic HAP's transferred at the gasoline loading rack.

(iii) The following equation shall be used for each gasoline loading rack i to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{j=1}^{j=n} (M_j)(G_j)}{G}$$

where:

M_j =Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole.

G , G_j , and n are as defined in paragraph (g)(4)(ii) of this section.

(iv) The following equation shall be used for each gasoline loading rack i to calculate the monthly weight-

ed rack bulk liquid loading temperature:

$$T = \frac{\sum_{j=1}^{j=n} (T_j)(G_j)}{G}$$

T_j =Average annual bulk temperature of individual organic HAP loaded at the gasoline loading rack, kelvin (degrees Celsius $^{\circ}\text{C}+273$).

G , G_j , and n are as defined in paragraph (g)(4)(ii) of this section.

(v) The following equation shall be used to calculate EGLR_{ic} :

$$\text{EGLR}_{ic} = 1 \times 10^{-8} G$$

G is as defined in paragraph (g)(4)(ii) of this section.

(vi) The following procedures and equations shall be used to calculate $\text{EGLR}_{i\text{ACTUAL}}$:

(A) If the gasoline loading rack is not controlled, $\text{EGLR}_{i\text{ACTUAL}} = \text{EGLR}_{iu}$, where EGLR_{iu} is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the gasoline loading rack is controlled using a control device or a pollution prevention measure not achieving the requirement of less than 10 milligrams of TOC per liter of gasoline loaded,

$$\text{EGLR}_{i\text{ACTUAL}} = \text{EGLR}_{iu} \left(\frac{1 - \text{Percent reduction}}{100\%} \right)$$

(f) The percent reduction for a control device shall be measured according to the procedures and test methods specified in § 63.128(a) of subpart G. If testing is not feasible, the percentage of reduction shall be determined through a design evaluation according to the procedures specified in § 63.128(h) of subpart G.

(2) Procedures for calculating the percentage of reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from marine tank vessel loading shall be calculated as follows:

(i) The following equation shall be used for each marine tank vessel i to calculate EMV_{iu} :

$$\text{EMV}_{iu} = \sum_{i=1}^m (Q_i)(F_i)(P_i)$$

where:

EMV_{iu} =Uncontrolled marine tank vessel HAP emission rate from marine tank vessel i , megagrams per month.

Q_i =Quantity of commodity loaded (per vessel type), liters.

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F_i=Emission factor, megagrams per liter.

P_i=Percent HAP.

m=Number of combinations of commodities and vessel types loaded.

Emission factors shall be based on test data or emission estimation procedures specified in § 63.565(l) of subpart Y.

(ii) The following procedures and equations shall be used to calculate EMV_{iACTUAL}:

(A) If the marine tank vessel is not controlled, EMV_{iACTUAL}=EMV_{iu}, where EMV_{iu} is calculated using the equations specified in paragraph (g)(5)(i) of this section.

(B) If the marine tank vessel is controlled using a control device or a pollution prevention measure achieving less than 97-percent reduction,

$$EMV_{iACTUAL} = EMV_{iu} \left(\frac{1 - \text{Percent reduction}}{100\%} \right)$$

(f) The percent reduction for a control device shall be measured according to the procedures and test methods specified in § 63.565(c) of subpart Y. If testing is not feasible, the percentage of reduction shall be determined through a design evaluation according to the procedures specified in § 63.128(h) of subpart G.

(2) Procedures for calculating the percentage of reduction for pollution prevention measures are specified in paragraph (j) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating sourcewide credits is:

$$\begin{aligned} \text{Credits} = & D \sum_{i=1}^n ((0.02) EPV1_{iu} - EPV1_{iACTUAL}) + D \sum_{i=1}^m (EPV2_{iBASE} - EPV2_{iACTUAL}) + \\ & D \sum_{i=1}^n ((0.05) ES1_{iu} - ES1_{iACTUAL}) + D \sum_{i=1}^m (ES2_{iBASE} - ES2_{iACTUAL}) + \\ & D \sum_{i=1}^n (EGLR1_{ic} - EGLR1_{iACTUAL}) + D \sum_{i=1}^m (EGLR2_{iBASE} - EGLR2_{iACTUAL}) + \\ & D \sum_{i=1}^n ((0.03) EMV1_{iu} - EMV1_{iACTUAL}) + D \sum_{i=1}^m (EMV2_{iBASE} - EMV2_{iACTUAL}) + \\ & D \sum_{i=1}^n (EWW1_{ic} - EWW1_{iACTUAL}) + D \sum_{i=1}^m (EWW2_{iBASE} - EWW2_{iACTUAL}) \end{aligned}$$

where:

Credits and all terms of the equation are in units of megagrams per month,

the baseline date is November 15, 1990, and

D=Discount factor=0.9 for all credit-generating emission points except those controlled by a pollution prevention measure, which will not be discounted.

EPV1_{iACTUAL}=Emissions for each Group 1 miscellaneous process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section.

(0.02) EPV1_{iu}=Emissions from each Group 1 miscellaneous process vent i if the reference control technology had been applied to the uncontrolled emissions. EPV1_{iu} is calculated according to paragraph (h)(2) of this section.

EPV2_{iBASE}=Emissions from each Group 2 miscellaneous process vent; at the baseline date, as calculated in paragraph (h)(2) of this section.

EPV2_{iACTUAL}=Emissions from each Group 2 miscellaneous process vent that is controlled, calculated according to paragraph (h)(2) of this section.

ES1_{iACTUAL}=Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section.

(0.05) ES1_{iu}=Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. ES1_{iu} is calculated according to paragraph (h)(3) of this section.

ES2_{iACTUAL}=Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section.

ES2_{iBASE}=Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section.

EGLR1_{iACTUAL}=Emissions from each Group 1 gasoline loading rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

EGLR_{ic}=Emissions from each Group 1 gasoline loading rack i if the reference control technology had been

applied to the uncontrolled emissions. EGLR_{iu} is calculated according to paragraph (h)(4) of this section.

EGRL2_{iACTUAL}=Emissions from each Group 2 gasoline loading rack i that is controlled, calculated according to paragraph (h)(4) of this section.

EGLR2_{iBASE}=Emissions from each Group 2 gasoline loading rack i at the baseline date, as calculated in paragraph (h)(4) of this section.

EMV1_{iACTUAL}=Emissions from each Group 1 marine tank vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

(0.03) EMV1_{iu}=Emissions from each Group 1 marine tank vessel i if the reference control technology had been applied to the uncontrolled emissions. EMV1_{iu} is calculated according to paragraph (h)(5) of this section.

EMV2_{iACTUAL}=Emissions from each Group 2 marine tank vessel i that is controlled, calculated according to paragraph (h)(5) of this section.

EMV2_{iBASE}=Emissions from each Group 2 marine tank vessel i at the baseline date, as calculated in paragraph (h)(5) of this section.

EWV1_{iACTUAL}=Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(6) of this section.

EWV1_{ic}=Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(6) of this section.

EWV2_{iACTUAL}=Emissions from each Group 2 wastewater stream i that is controlled, calculated according to paragraph (h)(6) of this section.

EWV2_{iBASE}=Emissions from each Group 2 wastewater stream i at the baseline date, calculated according to paragraph (h)(6) of this section.

n=Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for each kind of emission point.

m=Number of Group 2 emission points included in the emissions average.

The value of m is not necessarily the same for each kind of emission point.

(i) For an emission point controlled using a reference control technology, the percentage of reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the

procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be determined as described in paragraph (j) of this section.

(2) Emissions from process vents shall be determined as follows:

(i) Uncontrolled emissions from miscellaneous process vents, EPV_{1iu} , shall be calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from miscellaneous process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $EPV_{1iACTUAL}$, shall be calculated according to the following equation:

$$EPV_{1iACTUAL} = EPV_{1iu} \left(1 - \frac{\text{Nominal efficiency}\%}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents, $EPV_{2iACTUAL}$:

(A) For a Group 2 process vent controlled by a control device, a recovery

device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percentage of reduction less than or equal to a 98 percent reduction,

$$EPV_{2iACTUAL} = EPV_{2iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) EPV_{2iu} shall be calculated according to the equations and procedures for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

(2) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(3) If a recovery device was added as part of a pollution prevention project, EPV_{2iu} shall be calculated prior to that recovery device. The equation for EPV_{iu} in paragraph (g)(2)(ii) of this section shall be used to calculate EPV_{2iu} ; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(4) If a recovery device was added as part of a pollution prevention project, the percentage of reduction shall be

demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 process vent controlled using a technology with an ap-

proved nominal efficiency greater than a 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iv) Emissions from Group 2 process vents at baseline, $EPV2_{iBASE}$, shall be calculated as follows:

(A) If the process vent was uncontrolled on November 15, 1990, $EPV2_{iBASE} = EPV2_{iu}$, and shall be cal-

culated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the process vent was controlled on November 15, 1990,

$$EPV2_{iBASE} = EPV2_{iu} \left(1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where $EPV2_{iu}$ is calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percentage of reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990, $EPV2_{iBASE} = EPV2_{iu}$, where $EPV2_{iu}$ is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from storage vessels shall be determined as specified in § 63.150(h)(3) of subpart G, except as follows:

(i) All references to § 63.119(b) in § 63.150(h)(3) of subpart G shall be replaced with: § 63.119 (b) or § 63.119(b) except for § 63.119(b)(5) and (b)(6).

(ii) All references to § 63.119(c) in § 63.150(h)(3) of subpart G shall be replaced with: § 63.119(c) or § 63.119(c) except for § 63.119(c)(2).

(iii) All references to § 63.119(d) in § 63.150(h)(3) of subpart G shall be replaced with: § 63.119(d) or § 63.119(d) except for § 63.119(d)(2).

(4) Emissions from gasoline loading racks shall be determined as follows:

(i) Uncontrolled emissions from Group 1 gasoline loading racks, $EGLR1_{iu}$, shall be calculated according to the procedures and equations for $EGLR_{iu}$ as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(ii) Emissions from Group 1 gasoline loading racks if the reference control technology had been applied, $EGLR_{ic}$, shall be calculated according to the procedures and equations in paragraph (g)(4)(v) of this section.

(iii) Actual emissions from Group 1 gasoline loading racks controlled to less than 10 milligrams of TOC per liter of gasoline loaded; $EGLR_{iACTUAL}$, shall be calculated according to the following equation:

$$\text{EGLR1}_{\text{iACTUAL}} = \text{EGLR1}_{\text{iu}} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iv) The following procedures shall be used to calculate actual emissions from Group 2 gasoline loading racks, $\text{EGLR2}_{\text{iACTUAL}}$:

(A) For a Group 2 gasoline loading rack controlled by a control device or a

pollution prevention measure achieving emissions reduction but where emissions are greater than the 10 milligrams of TOC per liter of gasoline loaded requirement,

$$\text{EGLR2}_{\text{iACTUAL}} = \text{EGLR2}_{\text{iu}} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) EGLR2_{iu} shall be calculated according to the equations and procedures for EGLR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(2) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(4)(vi)(B)(1) and (g)(4)(vi)(B)(2) of this section.

(B) For a Group 2 gasoline loading rack controlled by using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than a 98-percent reduction,

$$\text{EGLR2}_{\text{iACTUAL}} = \text{EGLR2}_{\text{iu}} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(v) Emissions from Group 2 gasoline loading racks at baseline, $\text{EGLR2}_{\text{iBASE}}$, shall be calculated as follows:

(A) If the gasoline loading rack was uncontrolled on November 15, 1990, $\text{EGLR2}_{\text{iBASE}} = \text{EGLR2}_{\text{iu}}$, and shall be cal-

culated according to the procedures and equations for EGLR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the gasoline loading rack was controlled on November 15, 1990,

$$\text{EGLR2}_{\text{iBASE}} = \text{EGLR2}_{\text{iu}} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where EGLR2_{iu} is calculated according to the procedures and equations for EGLR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percentage of reduction shall be calculated according to the procedures in paragraphs (g)(4)(vi)(B)(1) and (g)(4)(vi)(B)(2) of this section.

(5) Emissions from marine tank vessels shall be determined as follows:

(i) Uncontrolled emissions from Group 1 marine tank vessels, EMV1_{iu} , shall be calculated according to the procedures and equations for EMV_{iu} as described in paragraph (g)(5)(i) of this section.

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(ii) Actual emissions from Group 1 marine tank vessels controlled using a technology or pollution prevention measure with an approved nominal ef-

ficiency greater than 97 percent, $EMV_{iACTUAL}$, shall be calculated according to the following equation:

$$EMV_{iACTUAL} = EMV_{iu} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 marine tank vessels, $EMV_{iACTUAL}$:

(A) For a Group 2 marine tank vessel controlled by a control device or a pollution prevention measure achieving a percentage of reduction less than or equal to 97 percent reduction,

$$EMV_{iACTUAL} = EMV_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

(1) EMV_{iu} shall be calculated according to the equations and procedures for EMV_{iu} in paragraph (g)(5)(i) of this section.

(2) The percentage of reduction shall be calculated according to the proce-

dures in paragraphs (g)(5)(ii)(B)(1) and (g)(5)(ii)(B)(2) of this section.

(B) For a Group 2 marine tank vessel controlled using a technology or a pollution prevention measure with an approved nominal efficiency greater than 97 percent,

$$EMV_{iACTUAL} = EMV_{iu} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

(iv) Emissions from Group 2 marine tank vessels at baseline, EMV_{iBASE} , shall be calculated as follows:

(A) If the marine terminal was uncontrolled on November 15, 1990, EMV_{iBASE} equals EMV_{iu} , and shall be

calculated according to the procedures and equations for EMV_{iu} in paragraph (g)(5)(i) of this section.

(B) If the marine tank vessel was controlled on November 15, 1990,

$$EMV_{iBASE} = EMV_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where EMV_{iu} is calculated according to the procedures and equations for EMV_{iu} in paragraph (g)(5)(i) of this section. Percentage of reduction shall be calculated according to the procedures

in paragraphs (g)(5)(ii)(B)(1) and (g)(5)(ii)(B)(2) of this section.

(6) Emissions from wastewater shall be determined as follows:

(i) For purposes of paragraphs (h)(4)(ii) through (h)(4)(vi) of this section, the following terms will have the meaning given them in paragraphs (h)(6)(i)(A) through (h)(6)(i)(C) of this section.

(A) *Correctly suppressed* means that a wastewater stream is being managed according to the requirements of §§ 61.343 through 61.347 or § 61.342(c)(1)(iii) of 40 CFR part 61, subpart FF, as applicable, and the emissions from the waste management units subject to those requirements are

routed to a control device that reduces HAP emissions by 95 percent or greater.

(B) *Treatment process* has the meaning given in § 61.341 of 40 CFR part 61, subpart FF except that it does not include biological treatment units.

(C) *Vapor control device* means the control device that receives emissions vented from a treatment process or treatment processes.

(ii) The following equation shall be used for each wastewater stream *i* to calculate EW_{ic} :

$$EW_{ic} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s (1 - Fr_m) Fe_m HAP_{im} + (0.05) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s (Fr_m HAP_{im})$$

where:

EW_{ic} = Monthly wastewater stream emission rate if wastewater stream *i* were controlled by the reference control technology, megagrams per month.

Q_i = Average flow rate for wastewater stream *i*, liters per minute.

H_i = Number of hours during the month that wastewater stream *i* was generated, hours per month.

Fr_m = Fraction removed of organic HAP *m* in wastewater, from table 7 of this subpart, dimensionless.

Fe_m = Fraction emitted of organic HAP *m* in wastewater from table 7 of this subpart, dimensionless.

s = Total number of organic HAP's in wastewater stream *i*.

HAP_{im} = Average concentration of organic HAP *m* in wastewater stream *i*, parts per million by weight.

(A) HAP_{im} shall be determined for the point of generation or at a location downstream of the point of generation. Wastewater samples shall be collected using the sampling procedures specified in Method 25D of 40 CFR part 60, appendix A. Where feasible, samples shall be taken from an enclosed pipe prior to the wastewater being exposed to the atmosphere. When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of organic HAP's prior to sampling. The samples col-

lected may be analyzed by either of the following procedures:

(1) A test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated pursuant to section 5.1 or 5.3 of Method 301 of appendix A of this part may be used; or

(2) Method 305 of appendix A of this part may be used to determine C_{im} , the average volatile organic HAP concentration of organic HAP *m* in wastewater stream *i*, and then HAP_{im} may be calculated using the following equation: $HAP_{im} = C_{im}/Fm_m$, where Fm_m for organic HAP *m* is obtained from table 7 of this subpart.

(B) Values for Q_i , HAP_{im} , and C_{im} shall be determined during a performance test conducted under representative conditions. The average value obtained from three test runs shall be used. The values of Q_i , HAP_{im} , and C_{im} shall be established in the Notification of Compliance Status report and must be updated as provided in paragraph (h)(6)(i)(C) of this section.

(C) If there is a change to the process or operation such that the previously measured values of Q_i , HAP_{im} , and C_{im} are no longer representative, a new performance test shall be conducted to determine new representative values of Q_i , HAP_{im} , and C_{im} . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

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(iii) The following equations shall be used to calculate $EW\text{W}_{i\text{ACTUAL}}$ for each Group 1 wastewater stream i that is correctly suppressed and is treated to a level more stringent than the reference control technology.

(A) If the Group 1 wastewater stream i is controlled using a treatment proc-

ess or series of treatment processes with an approved nominal reduction efficiency for an individually speciated HAP that is greater than that specified in table 7 of this subpart, and the vapor control device achieves a percentage of reduction equal to 95 percent, the following equation shall be used:

$$EW\text{W}_{i\text{ACTUAL}} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m \text{HAP}_{im} (1 - PR_{im})] + 0.05 (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [\text{HAP}_{im} PR_{im}]$$

Where:

$EW\text{W}_{i\text{ACTUAL}}$ = Monthly wastewater stream emission rate if wastewater stream i is treated to a level more stringent than the reference control technology, megagrams per month.

PR_{im} = The efficiency of the treatment process, or series of treatment processes, that treat wastewater stream i in reducing the emission potential of organic HAP m in wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{\text{HAP}_{im-in} - \text{HAP}_{im-out}}{\text{HAP}_{im-in}}$$

Where:

HAP_{im-in} = Average concentration of organic HAP m , parts per million by weight, as defined and determined according to paragraph (h)(6)(ii)(A)

of this section, in the wastewater entering the first treatment process in the series.

HAP_{im-out} = Average concentration of organic HAP m , parts per million by weight, as defined and determined according to paragraph (h)(6)(ii)(A) of this section, in the wastewater exiting the last treatment process in the series.

All other terms are as defined and determined in paragraph (h)(6)(ii) of this section.

(B) If the Group 1 wastewater stream i is not controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated HAP that is greater than that specified in table 7 of this subpart, but the vapor control device has an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EW\text{W}_{i\text{ACTUAL}} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m \text{HAP}_{im} (1 - A_m)] + \left(1 - \frac{\text{Nominal efficiency \%}}{100}\right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [\text{HAP}_{im} A_m]$$

Where:

Nominal efficiency = Approved reduction efficiency of the vapor control device, dimensionless, as determined according to the procedures in § 63.652(i).

A_m = The efficiency of the treatment process, or series of treatment processes, that treat wastewater stream i in reducing the emission potential of organic HAP m in wastewater, dimensionless.

All other terms are as defined and determined in paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(1) If a steam stripper meeting the specifications in the definition of reference control technology for wastewater is used, A_m shall be equal to the value of Fr_m given in table 7 of this subpart.

(2) If an alternative control device is used, the percentage of reduction must be determined using the equation and methods specified in paragraph

(h)(6)(iii)(A) of this section for determining PR_{im} . If the value of PR_{im} is greater than or equal to the value of FR_m given in table 7 of this subpart, then A_m equals FR_m unless a higher nominal efficiency has been approved. If a higher nominal efficiency has been approved for the treatment process, the owner or operator shall determine $EW1_{iACTUAL}$ according to paragraph (h)(6)(iii)(B) of this section rather than paragraph (h)(6)(iii)(A) of this section. If PR_{im} is less than the value of FR_m given in table 7 of this subpart, emis-

sions averaging shall not be used for this emission point.

(C) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated hazardous air pollutant that is greater than that specified in table 7 of this subpart, and the vapor control device has an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EW1_{iACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m HAP_{im} (1 - PR_{im})] + \left(1 - \frac{\text{Nominal efficiency}\%}{100}\right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} PR_{im}]$$

where all terms are as defined and determined in paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(iv) The following equation shall be used to calculate $EW2_{iBASE}$ for each

Group 2 wastewater stream i that on November 15, 1990 was not correctly suppressed or was correctly suppressed but not treated:

$$EW2_{iBASE} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s Fe_m HAP_{im}$$

Where:

$EW2_{iBASE}$ = Monthly wastewater stream emission rate if wastewater stream i is not correctly suppressed, megagrams per month.

Q_i , H_i , s , Fe_m , and HAP_{im} are as defined and determined according to paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(v) The following equation shall be used to calculate $EW2_{iBASE}$ for each

Group 2 wastewater stream i on November 15, 1990 was correctly suppressed. $EW2_{iBASE}$ shall be calculated as if the control methods being used on November 15, 1990 are in place and any control methods applied after November 15, 1990 are ignored. However, values for the parameters in the equation shall be representative of present production levels and stream properties.

$$EW2_{iBASE} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m HAP_{im} (1 - PR_{im})] + \left(1 - \frac{R_i}{100\%}\right) (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} PR_{im}]$$

where R_i is calculated according to paragraph (h)(6)(vii) of this section and all other terms are as defined and determined according to paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(vi) For Group 2 wastewater streams that are correctly suppressed, $EW2_{iACTUAL}$ shall be calculated according to the equation for $EW2_{iBASE}$ in paragraph (h)(6)(v) of this section. $EW2_{iACTUAL}$ shall be calculated with

all control methods in place accounted for.

(vii) The reduction efficiency, R_i , of the vapor control device shall be demonstrated according to the following procedures:

(A) Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate.

(B) The mass flow rate of organic compounds entering and exiting the control device shall be determined as follows:

(1) The time period for the test shall not be less than 3 hours during which at least three runs are conducted.

(2) A run shall consist of a 1-hour period during the test. For each run:

(i) The volume exhausted shall be determined using Methods 2, 2A, 2C, or 2D of 40 CFR part 60 appendix A, as appropriate;

(ii) The organic concentration in the vent stream entering and exiting the control device shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(3) The mass flow rate of organic compounds entering and exiting the control device during each run shall be calculated as follows:

$$E_a = \frac{0.0416}{10^6 \times m} \left[\sum_{p=1}^m V_{ap} \left(\sum_{i=1}^n C_{aip} MW_i \right) \right]$$

$$E_b = \frac{0.0416}{10^6 \times m} \left[\sum_{p=1}^m V_{bp} \left(\sum_{i=1}^n C_{bip} MW_i \right) \right]$$

Where:

E_a = Mass flow rate of organic compounds exiting the control device, kilograms per hour.

E_b = Mass flow rate of organic compounds entering the control device, kilograms per hour.

V_{ap} = Average volumetric flow rate of vent stream exiting the control device during run p at standards conditions, cubic meters per hour.

V_{bp} = Average volumetric flow rate of vent stream entering the control device during run p at standards conditions, cubic meters per hour.

p = Run.

m = Number of runs.

C_{aip} = Concentration of organic compound i measured in the vent stream exiting the control device during run p as determined by Method 18 of 40 CFR part 60 appendix A, parts per million by volume on a dry basis.

C_{bip} = Concentration of organic compound i measured in the vent stream entering the control device during run p as determined by Method 18 of 40 CFR part 60, appendix A, parts per million by volume on a dry basis.

MW_i = Molecular weight of organic compound i in the vent stream, kilograms per kilogram-mole.

n = Number of organic compounds in the vent stream.

0.0416 = Conversion factor for molar volume, kilograms-mole per cubic meter at 293 kelvin and 760 millimeters mercury absolute.

(C) The organic reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R = Total organic reduction efficiency for the control device, percentage.

E_b = Mass flow rate of organic compounds entering the control device, kilograms per hour.

E_a = Mass flow rate of organic compounds exiting the control device, kilograms per hour.

(i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percentages of reduction than the percentages of efficiency assigned to the reference control technologies in § 63.641.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be

used in more than three applications at a single plant site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Administrator in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance;

(ii) Description of the control technology including design specifications;

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented; and

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may grant conditional permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) of this section can be submitted to the permitting authority for the source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the submittal, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percentage of reduction) of pollution prevention measures:

(1) A pollution prevention measure is any practice that meets the criteria of

paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions while the same product is produced.

(ii) Pollution prevention measures may include: Substitution of feedstocks that reduce HAP emissions, alterations to the production process to reduce the volume of materials released to the environment, equipment modifications; housekeeping measures, and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990 can

be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percentage of reduction used in the equations in paragraphs (g)(2) and (g)(3) of this section and paragraphs (h)(2) through (h)(4) of this section is the difference in percentage between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) The following equation shall be used to calculate the percentage of reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B \frac{(E_{pp} \times P_B)}{P_{pp}}}{E_B} \times 100\%$$

Where:

Percent reduction=Efficiency of pollution prevention measure (percentage of organic HAP reduction).

E_B =Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

E_{pp} =Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

P_B =Monthly production before the pollution prevention measure,

megagrams per month, during the same period over which E_B is calculated.

P_{pp} =Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure, E_B , shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), (g)(4), and (g)(5) of this section for miscellaneous process vents, storage vessels, gasoline loading racks, and marine tank vessels.

(B) For wastewater, E_B shall be calculated as follows:

$$E_B = \sum_{i=1}^n \left[(6.0 \times 10^{-8}) Q_{Bi} H_{Bi} \sum_{m=1}^s Fe_m HAP_{Bim} \right]$$

where:

n=Number of wastewater streams.

Q_{Bi} =Average flow rate for wastewater stream i before the pollution prevention measure, liters per minute.

H_{Bi} =Number of hours per month that wastewater stream i was discharged before the pollution prevention measure, hours per month.

s=Total number of organic HAP's in wastewater stream i.

F_{em} =Fraction emitted of organic HAP m in wastewater from table 7 of this subpart, dimensionless.

HAP_{Bim} =Average concentration of organic HAP m in wastewater stream i, defined and determined according to paragraph (h)(6)(ii)(A)(2) of this section, before the pollution pre-

vention measure, parts per million by weight, as measured before the implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to July 14, 1994, records may be used to determine E_B .

(D) The monthly emissions after the pollution prevention measure, E_{pp} , may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater, E_{pp} shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^n \left[\left(6.0 * 10^{-8} \right) Q_{ppi} H_{ppi} \sum_{m=1}^s F_{em} HAP_{ppim} \right]$$

where n, Q, H, s, F_{em} , and HAP are defined and determined as described in paragraph (j)(2)(ii)(B) of this section except that Q_{ppi} , H_{ppi} , and HAP_{ppim} shall be determined after the pollution prevention measure has been implemented.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percentage of reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percentage of reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(6) of this section used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percentage of reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a

source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator shall demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the State or local permitting authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§63.643 through 63.647, and §§63.650 and 63.651.

(1) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the State or local permitting authority.

(i) The State or local permitting authority may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency may be made according to any guidance that the EPA makes available for use.

(2) Owners and operators shall provide documentation demonstrating the

hazard or risk equivalency of their proposed emissions average in their Implementation Plan.

(3) An emissions averaging plan that does not demonstrate an equivalent or lower hazard or risk to the satisfaction of the State or local permitting authority shall not be approved. The State or local permitting authority may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.643 through 63.647, and §§ 63.650 and 63.651.

(4) A hazard or risk equivalency demonstration shall:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the State or local permitting authority for such demonstrations.

(l) For periods of excess emissions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of excess emissions in the Periodic Reports as required in § 63.654(g)(6).

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures for demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the period of excess emissions and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion

to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

[60 FR 43260, Aug. 18, 1995; 60 FR 49976, Sept. 27, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29881, June 12, 1996; 61 FR 33799, June 28, 1996]

§ 63.653 Monitoring, recordkeeping, and implementation plan for emissions averaging.

(a) For each emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§ 63.643 through 63.647, and §§ 63.650 and 63.651. The specific requirements for miscellaneous process vents, storage vessels, wastewater, gasoline loading racks, and marine tank vessels are identified in paragraphs (a)(1) through (a)(7) of this section.

(1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each miscellaneous process vent equipped with a flare, incinerator, boiler, or process heater:

(i) Conduct initial performance tests to determine the percentage of reduction as specified in § 63.645 of this subpart and § 63.116 of subpart G; and

(ii) Monitor the operating parameters specified in § 63.644, as appropriate for the specific control device.

(2) The source shall implement the following procedures for each miscellaneous process vent, equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:

(i) Determine the flow rate and organic HAP concentration using the methods specified in § 63.115 (a)(1) and (a)(2), § 63.115 (b)(1) and (b)(2), and § 63.115(c)(3) of subpart G; and

(ii) Monitor the operating parameters specified in § 63.114 of subpart G, as appropriate for the specific recovery device.

(3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed

vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures in § 63.646 of this subpart and § 63.120 of subpart G; and

(ii) For closed vent systems with control devices, conduct an initial design evaluation as specified in § 63.646 of this subpart and § 63.120(d) of subpart G.

(4) For each gasoline loading rack that is controlled, perform the testing and monitoring procedures specified in §§ 63.425 and 63.427 of subpart R of this part except § 63.425(d) or § 63.427(c).

(5) For each marine tank vessel that is controlled, perform the compliance, monitoring, and performance testing, procedures specified in §§ 63.563, 63.564, and 63.565 of subpart Y of this part.

(6) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests as specified in § 61.355 of subpart FF of part 60;

(ii) Conduct inspections and monitoring as specified in §§ 61.343 through 61.349 and § 61.354 of 40 CFR part 61, subpart FF.

(7) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in §§ 63.643 through 63.647 and §§ 63.650 and 63.651, the owner or operator shall establish a site-specific monitoring parameter and shall submit the information specified in § 63.654(h)(4) in the Implementation Plan.

(b) Records of all information required to calculate emission debits and credits and records required by § 63.654 shall be retained for 5 years.

(c) Notifications of Compliance Status report, Periodic Reports, and other reports shall be submitted as required by § 63.654.

(d) Each owner or operator of an existing source who elects to comply with § 63.654 (g) and (h) by using emissions averaging for any emission points shall submit an Implementation Plan.

(1) The Implementation Plan shall be submitted to the Administrator and approved prior to implementing emissions averaging. This information may

be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, in a Notification of Compliance Status Report, in a Periodic Report or in any combination of these documents. If an owner or operator submits the information specified in paragraph (d)(2) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating the previously submitted information.

(2) The Implementation Plan shall include the information specified in paragraphs (d)(2)(i) through (d)(2)(ix) of this section for all points included in the average.

(i) The identification of all emission points in the planned emissions average and notation of whether each emission point is a Group 1 or Group 2 emission point as defined in § 63.641.

(ii) The projected annual emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.652. The annual projected credits must be greater than the projected debits, as required under § 63.652(e)(3).

(iii) The specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(iv) The specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in § 63.652(j)(1) must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(v) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in paragraphs (a), (b), and (c) of this section that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(vi) Documentation of the information listed in paragraphs (d)(2)(vi)(A) through (d)(2)(vi)(D) of this section for

each emission point included in the average.

(A) The values of the parameters used to determine whether each emission point in the emissions average is Group 1 or Group 2.

(B) The estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.652 (g) and (h). These parameter values or, as appropriate, limited ranges for the parameter values, shall be specified in the source's Implementation Plan as enforceable operating conditions. Changes to these parameters must be reported in the next Periodic Report.

(C) The estimated percentage of reduction if a control technology achieving a lower percentage of reduction than the efficiency of the reference control technology, as defined in § 63.641, is or will be applied to the emission point.

(D) The anticipated nominal efficiency if a control technology achieving a greater percentage emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in § 63.652(i) shall be followed to apply for a nominal efficiency.

(vii) The information specified in § 63.654(h)(4) for:

(A) Each miscellaneous process vent controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in paragraphs (a)(1) or (a)(2) of this section; and

(B) Each storage vessel controlled by a pollution prevention measure or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(viii) Documentation of the information listed in paragraphs (d)(2)(viii)(A) through (d)(2)(viii)(G) of this section for each process wastewater stream included in the average.

(A) The information used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream.

(B) The estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in § 63.652(h)(6).

(C) The estimated percentage of reduction if the wastewater stream is or will be controlled using a treatment process or series of treatment processes that achieves an emission reduction less than or equal to the emission reduction specified in table 7 of this subpart.

(D) The estimated percentage of reduction if a control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(E) The estimated percentage of reduction if a pollution prevention measure is or will be applied.

(F) The anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under § 63.652(i). A nominal efficiency shall be applied for if:

(1) A control technology is or will be applied to the wastewater stream and achieves an emission reduction greater than the emission reduction specified in table 7 of this subpart; or

(2) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(G) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP's from wastewater and for which no monitoring parameters or inspection procedures are specified in § 63.647, the information specified in § 63.654(h)(4) shall be included in the Implementation Plan.

(ix) Documentation required in § 63.652(k) demonstrating the hazard or risk equivalency of the proposed emissions average.

(3) The Administrator shall determine within 120 calendar days whether the Implementation Plan submitted presents sufficient information. The Administrator shall either approve the Implementation Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall

approve, disapprove, or request changes to the plan within 120 calendar days.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, June 12, 1996; 63 FR 31361, June 9, 1998]

EFFECTIVE DATE NOTE: At 63 FR 31361, June 9, 1998, § 63.653, was amended by revising paragraph (d)(1), effective Aug. 18, 1998. For the convenience of the user, the superseded text is set forth as follows:

§ 63.653 Monitoring, recordkeeping, and implementation plan for emission averaging.

* * * * *

(d) * * *

(1) The Implementation Plan shall be submitted no later than 18 months prior to the compliance date in § 63.640(h). This information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination of the three. If an owner or operator submits the information specified in paragraph (d)(2) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating the previously submitted information.

* * * * *

§ 63.654 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to the wastewater provisions in § 63.647 shall comply with the recordkeeping and reporting provisions in §§ 61.356 and 61.357 of 40 CFR part 61 subpart FF. There are no additional reporting and recordkeeping requirements for wastewater under this subpart unless a wastewater stream is included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(b) Each owner or operator subject to the gasoline loading rack provisions in § 63.650 shall comply with the recordkeeping and reporting provisions in § 63.428 (b) and (c), (g)(1), and (h)(1) through (h)(3) of subpart R of this part. These requirements are summarized in table 4 of this subpart. There are no additional reporting and recordkeeping requirements for gasoline loading racks under this subpart unless a loading rack is included in an emissions average. Recordkeeping and reporting for

emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(c) Each owner or operator subject to the marine tank vessel loading operation standards in § 63.651 shall comply with the recordkeeping and reporting provisions in §§ 63.566 and 63.567(a) and § 63.567 (c) through (i) of subpart Y of this part. These requirements are summarized in table 5 of this subpart. There are no additional reporting and recordkeeping requirements for marine tank vessel loading operations under this subpart unless marine tank vessel loading operations are included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(d) Each owner or operator subject to the equipment leaks standards in § 63.648 shall comply with the recordkeeping and reporting provisions in paragraphs (d)(1) through (d)(6) of this section.

(1) Sections 60.486 and 60.487 of subpart VV of part 60, or §§ 63.181 and 63.182 of subpart H of this part except for § 63.182, paragraphs (b), (c)(2), and (c)(4).

(2) The Notification of Compliance Status report required by § 63.182(c) of subpart H and the initial semiannual report required by § 60.487(b) of 40 CFR part 60, subpart VV shall be submitted within 150 days of the compliance date specified in § 63.640(h); the requirements of subpart H of this part are summarized in table 3 of this subpart.

(3) An owner or operator who determines that a compressor qualifies for the hydrogen service exemption in § 63.648 shall also keep a record of the demonstration required by § 63.648.

(4) An owner or operator must keep a list of identification numbers for valves that are designated as leakless per § 63.648(c)(10).

(5) An owner or operator must identify, either by list or location (area or refining process unit), equipment in organic HAP service less than 300 hours per year within refining process units subject to this subpart.

(6) An owner or operator must keep a list of reciprocating pumps and compressors determined to be exempt from seal requirements as per §§ 63.648 (f) and (i).

(e) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (e)(1) through (e)(3) of this section except as provided in paragraph (h)(5) of this section, and shall keep records as described in paragraph (i) of this section.

(1) A Notification of Compliance Status report as described in paragraph (f) of this section;

(2) Periodic Reports as described in paragraph (g) of this section; and

(3) Other reports as described in paragraph (h) of this section.

(f) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status report within 150 days after the compliance dates specified in § 63.640(h). This information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination of the three. If the required information has been submitted before the date 150 days after the compliance date specified in § 63.640(h), a separate Notification of Compliance Status report is not required within 150 days after the compliance dates specified in § 63.640(h). If an owner or operator submits the information specified in paragraphs (f)(1) through (f)(5) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the previously submitted information.

(1) The Notification of Compliance Status report shall include the information specified in paragraphs (f)(1)(i) through (f)(1)(v) of this section.

(i) For storage vessels, this report shall include the information specified in paragraphs (f)(1)(i)(A) through (f)(1)(i)(D) of this section.

(A) Identification of each storage vessel subject to this subpart, whether the vessel is Group 1 or Group 2, and the method of compliance for each Group 1 storage vessel that is not included in an emissions average (i.e., internal floating roof, external floating roof, or closed-vent system and control device).

(B) If a closed vent system and a control device other than a flare is used to

comply with § 63.646 the owner or operator shall submit:

(1) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed; and either

(2) The design evaluation documentation specified in § 63.120(d)(1)(i) of subpart G, if the owner or operator elects to prepare a design evaluation; or

(3) If the owner or operator elects to submit the results of a performance test, identification of the storage vessel and control device for which the performance test will be submitted, and identification of the emission point(s) that share the control device with the storage vessel and for which the performance test will be conducted.

(C) If a closed vent system and control device other than a flare is used, the owner or operator shall submit:

(1) The operating range for each monitoring parameter. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

(2) If a performance test is conducted instead of a design evaluation, results of the performance test demonstrating that the control device achieves greater than or equal to the required control efficiency. A performance test conducted prior to the compliance date of this subpart can be used to comply with this requirement, provided that the test was conducted using EPA methods and that the test conditions are representative of current operating practices.

(D) If a closed vent system and a flare is used, the owner or operator shall submit:

(1) Flare design (e.g., steam-assisted, air-assisted, or nonassisted);

(2) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.120(e) of subpart G of this part; and

(3) All periods during the compliance determination when the pilot flame is absent.

(ii) For miscellaneous process vents, identification of each miscellaneous process vent subject to this subpart, whether the process vent is Group 1 or Group 2, and the method of compliance for each Group 1 miscellaneous process vent that is not included in an emissions average (e.g., use of a flare or other control device meeting the requirements of § 63.643(a)).

(iii) For miscellaneous process vents controlled by control devices required to be tested under § 63.645 of this subpart and § 63.116(c) of subpart G of this part, performance test results including the information in paragraphs (f)(1)(iii)(A) and (B) of this section. Results of a performance test conducted prior to the compliance date of this subpart can be used provided that the test was conducted using the methods specified in § 63.645 and that the test conditions are representative of current operating conditions.

(A) The percentage of reduction of organic HAP's or TOC, or the outlet concentration of organic HAP's or TOC (parts per million by volume on a dry basis corrected to 3 percent oxygen), determined as specified in § 63.116(c) of subpart G of this part; and

(B) The value of the monitored parameters specified in table 10 of this subpart, or a site-specific parameter approved by the permitting authority, averaged over the full period of the performance test.

(iv) For miscellaneous process vents controlled by flares, performance test results including the information in paragraphs (f)(1)(iv)(A) and (B) of this section;

(A) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.645 of this subpart and § 63.116(a) of subpart G of this part, and

(B) A statement of whether a flame was present at the pilot light over the full period of the compliance determination.

(v) For equipment leaks complying with § 63.648(c) (i.e., complying with the requirements of subpart H of this part), the Notification of Compliance Report Status report information required by § 63.182(c) of subpart H and whether the

percentage of leaking valves will be reported on a process unit basis or a sourcewide basis.

(2) If initial performance tests are required by §§ 63.643 through 63.653 of this subpart, the Notification of Compliance Status report shall include one complete test report for each test method used for a particular source.

(i) For additional tests performed using the same method, the results specified in paragraph (f)(1) of this section shall be submitted, but a complete test report is not required.

(ii) A complete test report shall include a sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(iii) Performance tests are required only if specified by §§ 63.643 through 63.653 of this subpart. Initial performance tests are required for some kinds of emission points and controls. Periodic testing of the same emission point is not required.

(3) For each monitored parameter for which a range is required to be established under § 63.120(d) of subpart G of this part for storage vessels or § 63.644 for miscellaneous process vents, the Notification of Compliance Status report shall include the information in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) The specific range of the monitored parameter(s) for each emission point;

(ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range ensures compliance with the emission standard.

(A) If a performance test is required by this subpart for a control device,

the range shall be based on the parameter values measured during the performance test supplemented by engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of permitted parameter values.

(B) If a performance test is not required by this subpart for a control device, the range may be based solely on engineering assessments and manufacturers' recommendations.

(iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.

(4) Results of any continuous monitoring system performance evaluations shall be included in the Notification of Compliance Status report.

(5) For emission points included in an emissions average, the Notification of Compliance Status report shall include the values of the parameters needed for input to the emission credit and debit equations in § 63.652(g) and (h), calculated or measured according to the procedures in § 63.652(g) and (h), and the resulting credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified in § 63.640.

(g) The owner or operator of a source subject to this subpart shall submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the compliance exceptions specified in paragraphs (g)(1) through (g)(6) of this section occur. The first 6-month period shall begin on the date the Notification of Compliance Status report is required to be submitted. A Periodic Report is not required if none of the compliance exceptions specified in paragraphs (g)(1) through (g)(6) of this section occurred during the 6-month period unless emissions averaging is utilized. Quarterly reports must be submitted for emission points included in emissions averages, as provided in paragraph (g)(8) of this section. An owner or operator may submit reports required by other regulations in place of or as part of the Periodic Report required by this paragraph if the reports contain the information re-

quired by paragraphs (g)(1) through (g)(8) of this section.

(1) For storage vessels, Periodic Reports shall include the information specified for Periodic Reports in paragraph (g)(2) through (g)(5) of this section except that information related to gaskets, slotted membranes, and sleeve seals is not required for storage vessels that are part of an existing source.

(2) An owner or operator who elects to comply with § 63.646 by using a fixed roof and an internal floating roof or by using an external floating roof converted to an internal floating roof shall submit the results of each inspection conducted in accordance with § 63.120(a) of subpart G of this part in which a failure is detected in the control equipment.

(i) For vessels for which annual inspections are required under § 63.120(a)(2)(i) or (a)(3)(ii) of subpart G of this part, the specifications and requirements listed in paragraphs (g)(2)(i)(A) through (g)(2)(i)(C) of this section apply.

(A) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

(B) Except as provided in paragraph (g)(2)(i)(C) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.

(C) If an extension is utilized in accordance with § 63.120(a)(4) of subpart G of this part, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(a)(4) of subpart G of this part; and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(ii) For vessels for which inspections are required under § 63.120(a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of subpart G of this part (i.e., internal inspections), the specifications and requirements listed in paragraphs (g)(2)(ii)(A) and (g)(2)(ii)(B) of this section apply.

(A) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or, for a storage vessel that is part of a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than a 10 percent open area.

(B) Each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(3) An owner or operator who elects to comply with § 63.646 by using an external floating roof shall meet the periodic reporting requirements specified in paragraphs (g)(3)(i) through (g)(3)(iii) of this section.

(i) The owner or operator shall submit, as part of the Periodic Report, documentation of the results of each seal gap measurement made in accordance with § 63.120(b) of subpart G of this part in which the seal and seal gap requirements of § 63.120(b)(3), (b)(4), (b)(5), or (b)(6) of subpart G of this part are not met. This documentation shall include the information specified in paragraphs (g)(3)(i)(A) through (g)(3)(i)(D) of this section.

(A) The date of the seal gap measurement.

(B) The raw data obtained in the seal gap measurement and the calculations described in § 63.120(b)(3) and (b)(4) of subpart G of this part.

(C) A description of any seal condition specified in § 63.120(b)(5) or (b)(6) of subpart G of this part that is not met.

(D) A description of the nature of and date the repair was made, or the date the storage vessel was emptied.

(ii) If an extension is utilized in accordance with § 63.120(b)(7)(ii) or (b)(8) of subpart G of this part, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(b)(7)(ii) or (b)(8) of subpart G of this part, as applicable; and describe the date the vessel was emptied and the nature of and date the repair was made.

(iii) The owner or operator shall submit, as part of the Periodic Report, documentation of any failures that are identified during visual inspections required by § 63.120(b)(10) of subpart G of this part. This documentation shall meet the specifications and requirements in paragraphs (g)(3)(iii)(A) and (g)(3)(iii)(B) of this section.

(A) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or, for a storage vessel that is part of a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than 10 percent open area.

(B) Each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(4) An owner or operator who elects to comply with § 63.646 by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (g)(2) of this section.

(5) An owner or operator who elects to comply with § 63.646 by installing a closed vent system and control device shall submit, as part of the next Periodic Report, the information specified in paragraphs (g)(5)(i) through (g)(5)(iii) of this section.

(i) The Periodic Report shall include the information specified in paragraphs (g)(5)(i)(A) and (g)(5)(i)(B) of this section for those planned routine maintenance operations that would require

the control device not to meet the requirements of § 63.119(e)(1) or (e)(2) of subpart G of this part, as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of § 63.119 (e)(1) or (e)(2) of subpart G of this part, as applicable, due to planned routine maintenance.

(ii) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status report. The description shall include: Identification of the control device for which the measured parameters were outside of the established ranges, and causes for the measured parameters to be outside of the established ranges.

(iii) If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in § 63.11(b) of subpart A of this part and shall include: Identification of the flare that does not meet the general requirements specified in § 63.11(b) of subpart A of this part, and reasons the flare did not meet the general requirements specified in § 63.11(b) of subpart A of this part.

(6) For miscellaneous process vents for which continuous parameter monitors are required by this subpart, periods of excess emissions shall be identified in the Periodic Reports and shall be used to determine compliance with the emission standards.

(i) Period of excess emission means any of the following conditions:

(A) An operating day when the daily average value of a monitored parameter, except presence of a flare pilot flame, is outside the range specified in

the Notification of Compliance Status report. Monitoring data recorded during periods of monitoring system breakdown, repairs, calibration checks and zero (low-level) and high-level adjustments shall not be used in computing daily average values of monitored parameters.

(B) An operating day when all pilot flames of a flare are absent.

(C) An operating day when monitoring data required to be recorded in paragraphs (i)(3) (i) and (ii) of this section are available for less than 75 percent of the operating hours.

(D) For data compression systems approved under paragraph (h)(5)(iii) of this section, an operating day when the monitor operated for less than 75 percent of the operating hours or a day when less than 18 monitoring values were recorded.

(ii) For miscellaneous process vents, excess emissions shall be reported for the operating parameters specified in table 10 of this subpart unless other site-specific parameter(s) have been approved by the operating permit authority.

(iii) Periods of startup and shutdown that meet the definition of § 63.641, and malfunction that meet the definition in § 63.2 and periods of performance testing and monitoring system calibration shall not be considered periods of excess emissions. Malfunctions may include process unit, control device, or monitoring system malfunctions.

(7) If a performance test for determination of compliance for a new emission point subject to this subpart or for an emission point that has changed from Group 2 to Group 1 is conducted during the period covered by a Periodic Report, the results of the performance test shall be included in the Periodic Report.

(i) Results of the performance test shall include the percentage of emissions reduction or outlet pollutant concentration reduction (whichever is needed to determine compliance) and the values of the monitored operating parameters.

(ii) The complete test report shall be maintained onsite.

(8) The owner or operator of a source shall submit quarterly reports for all

emission points included in an emissions average.

(i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status report no later than 150 days after the compliance date specified in § 63.640.

(ii) The quarterly reports shall include:

(A) The information specified in this paragraph and in paragraphs (g)(2) through (g)(7) of this section for all storage vessels and miscellaneous process vents included in an emissions average;

(B) The information required to be reported by § 63.428 (h)(1), (h)(2), and (h)(3) for each gasoline loading rack included in an emissions average, unless this information has already been submitted in a separate report;

(C) The information required to be included in quarterly reports by §§ 63.567(f) and 63.567(i)(2) of subpart Y of this part for each marine tank vessel loading operation included in an emissions average, unless the information has already been submitted in a separate report;

(D) Any information pertaining to each wastewater stream included in an emissions average that the source is required to report under the Implementation Plan for the source;

(E) The credits and debits calculated each month during the quarter;

(F) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under §§ 63.652(e)(4);

(G) The values of any inputs to the credit and debit equations in § 63.652 (g) and (h) that change from month to month during the quarter or that have changed since the previous quarter; and

(H) Any other information the source is required to report under the Implementation Plan for the source.

(iii) Every fourth quarterly report shall include the following:

(A) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.652(e)(3); and

(B) A certification of compliance with all the emissions averaging provisions in § 63.652 of this subpart.

(h) Other reports shall be submitted as specified in subpart A of this part and as follows:

(1) Reports of startup, shutdown, and malfunction required by § 63.10(d)(5). Records and reports of startup, shutdown, and malfunction are not required if they pertain solely to Group 2 emission points, as defined in § 63.641, that are not included in an emissions average. For purposes of this paragraph, startup and shutdown shall have the meaning defined in § 63.641, and malfunction shall have the meaning defined in § 63.2; and

(2) For storage vessels, notifications of inspections as specified in paragraphs (h)(2)(i) and (h)(2)(ii) of this section;

(i) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the refilling of each Group 1 storage vessel that has been emptied and degassed.

(A) Except as provided in paragraphs (h)(2)(i) (B) and (C) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP's to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.

(B) Except as provided in paragraph (h)(2)(i)(C) of this section, if the internal inspection required by §§ 63.120(a)(2), 63.120(a)(3), or 63.120(b)(10) of subpart G of this part is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP's, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. This notification, including the written documentation, may also be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.

(C) The State or local permitting authority can waive the notification requirements of paragraphs (h)(2)(i)(A) and/or (h)(2)(i)(B) of this section for all or some storage vessels at petroleum refineries subject to this subpart. The State or local permitting authority may also grant permission to refill storage vessels sooner than 30 days after submitting the notification required by paragraph (h)(2)(i)(A) of this section, or sooner than 7 days after submitting the notification required by paragraph (h)(2)(i)(B) of this section for all storage vessels, or for individual storage vessels on a case-by-case basis.

(ii) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof shall notify the Administrator of any seal gap measurements. The notification shall be made in writing at least 30 calendar days in advance of any gap measurements required by § 63.120 (b)(1) or (b)(2) of subpart G of this part. The State or local permitting authority can waive this notification requirement for all or some storage vessels subject to the rule or can allow less than 30 calendar days' notice.

(3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.652(h).

(4) The owner or operator who requests approval to monitor a different parameter than those listed in § 63.644 for miscellaneous process vents or who is required by § 63.653(a)(8) to establish a site-specific monitoring parameter for a point in an emissions average shall submit the information specified in paragraphs (h)(4)(i) through (h)(4)(iii) of this section. For new or reconstructed sources, the information shall be submitted with the application for approval of construction or reconstruction required by § 63.5(d) of subpart A and for existing sources, and the information shall be submitted no later than 18 months prior to the compliance date. The information may be submitted in an operating permit application, in an amendment to an operating per-

mit application, or in a separate submittal.

(i) A description of the parameter(s) to be monitored to determine whether excess emissions occur and an explanation of the criteria used to select the parameter(s).

(ii) A description of the methods and procedures that will be used to demonstrate that the parameter can be used to determine excess emissions and the schedule for this demonstration. The owner or operator must certify that they will establish a range for the monitored parameter as part of the Notification of Compliance Status report required in paragraphs (e) and (f) of this section.

(iii) The frequency and content of monitoring, recording, and reporting if: monitoring and recording are not continuous; or if periods of excess emissions, as defined in paragraph (g)(6) of this section, will not be identified in Periodic Reports required under paragraphs (e) and (g) of this section. The rationale for the proposed monitoring, recording, and reporting system shall be included.

(5) An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in paragraph (i) of this section.

(i) Requests shall be submitted with the Application for Approval of Construction or Reconstruction for new sources and no later than 18 months prior to the compliance date for existing sources. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal. Requests shall contain the information specified in paragraphs (h)(5)(iii) through (h)(5)(iv) of this section, as applicable.

(ii) The provisions in § 63.8(f)(5)(i) of subpart A of this part shall govern the review and approval of requests.

(iii) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example, once every hour) but records all values that meet set criteria for variation from previously recorded values.

(A) The requested system shall be designed to:

(1) Measure the operating parameter value at least once every hour.

(2) Record at least 24 values each day during periods of operation.

(3) Record the date and time when monitors are turned off or on.

(4) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident.

(5) Compute daily average values of the monitored operating parameter based on recorded data.

(B) The request shall contain a description of the monitoring system and data compression recording system including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all criteria of paragraph (h)(5)(iii)(A) of this section.

(iv) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in § 63.8(f) of subpart A of this part.

(6) The owner or operator shall submit the information specified in paragraphs (h)(6)(i) through (h)(6)(iii) of this section, as applicable. For existing sources, this information shall be submitted no later than 18 months prior to the compliance date. For a new source, the information shall be submitted with the application for approval of construction or reconstruction required by § 63.5(d) of subpart A of this part. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal.

(i) The determination of applicability of this subpart to petroleum refining process units that are designed and operated as flexible operation units.

(ii) The determination of applicability of this subpart to any storage vessel for which use varies from year to year.

(iii) The determination of applicability of this subpart to any distillation unit for which use varies from year to year.

(i) *Recordkeeping.* (1) Each owner or operator subject to the storage vessel provisions in § 63.646 shall keep the records specified in § 63.123 of subpart G of this part except as specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section.

(i) Records related to gaskets, slotted membranes, and sleeve seals are not required for storage vessels within existing sources.

(ii) All references to § 63.122 in § 63.123 of subpart G of this part shall be replaced with § 63.654(e).

(iii) All references to § 63.150 in § 63.123 of subpart G of this part shall be replaced with § 63.652.

(iv) If a storage vessel is determined to be Group 2 because the weight percent total organic HAP of the stored liquid is less than or equal to 4 percent for existing sources or 2 percent for new sources, a record of any data, assumptions, and procedures used to make this determination shall be retained.

(2) Each owner or operator required to report the results of performance tests under paragraphs (f) and (g)(7) of this section shall retain a record of all reported results as well as a complete test report, as described in paragraph (f)(2)(ii) of this section for each emission point tested.

(3) Each owner or operator required to continuously monitor operating parameters under § 63.644 for miscellaneous process vents or under §§ 63.652 and 63.653 for emission points in an emissions average shall keep the records specified in paragraphs (i)(3)(i) through (i)(3)(v) of this section unless an alternative recordkeeping system has been requested and approved under paragraph (h) of this section.

(i) The monitoring system shall measure data values at least once every hour.

(ii) The owner or operator shall record either:

(A) Each measured data value; or

(B) Block average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period)

block average instead of all measured values.

(iii) Daily average values of each continuously monitored parameter shall be calculated for each operating day and retained for 5 years except as specified in paragraph (i)(3)(iv) of this section.

(A) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per day if operation is not continuous.

(B) The operating day shall be the period defined in the Notification of Compliance Status report. It may be from midnight to midnight or another daily period.

(iv) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status report, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that day. For these days, the records required in paragraph (i)(3)(ii) of this section shall also be retained for 5 years.

(v) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.

(4) All other information required to be reported under paragraphs (a) through (h) of this section shall be retained for 5 years.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, June 12, 1996]

§§ 63.655–63.679 [Reserved]

APPENDIX TO SUBPART CC TO PART 63— TABLES

TABLE 1.—HAZARDOUS AIR POLLUTANTS

Chemical name	CAS No. ^a
Benzene	71432
Biphenyl	92524
Butadiene (1,3)	10990
Carbon disulfide	75150
Carbonyl sulfide	463581
Cresol (mixed isomers ^b)	1319773
Cresol (m-)	108394
Cresol (o-)	95487
Cresol (p-)	106445
Cumene	98828
Dibromoethane (1,2) (ethylene dibromide)	106934
Dichloroethane (1,2)	107062
Diethanolamine	111422
Ethylbenzene	100414
Ethylene glycol	107211
Hexane	110543
Methanol	67561
Methyl ethyl ketone (2-butanone)	78933
Methyl isobutyl ketone (hexone)	108101
Methyl tert butyl ether	1634044
Naphthalene	91203
Phenol	108952
Toluene	108883
Trimethylpentane (2,2,4)	540841
Xylene (mixed isomers ^b)	1330207
xylene (m-)	108383
xylene (o-)	95476
xylene (p-)	106423

^a CAS number = Chemical Abstract Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

TABLE 2.—LEAK DEFINITIONS FOR PUMPS AND VALVES

Standard ^a	Phase	Leak definition (parts per million)
§ 63.163 (pumps)	I	10,000
	II	5,000
	III	2,000
§ 63.168 (valves)	I	10,000
	II	1,000
	III	1,000

^a Subpart H of this part.

TABLE 3.—EQUIPMENT LEAK RECORDKEEPING AND REPORTING REQUIREMENTS FOR SOURCES COMPLYING WITH § 63.648 OF SUBPART CC BY COMPLIANCE WITH SUBPART H OF THIS PART ^a

Reference (section of subpart H of this part)	Description	Comment
63.181(a)	Recordkeeping system requirements	Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).
63.181(b)	Records required for process unit equipment.	Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).

TABLE 3.—EQUIPMENT LEAK RECORDKEEPING AND REPORTING REQUIREMENTS FOR SOURCES COMPLYING WITH § 63.648 OF SUBPART CC BY COMPLIANCE WITH SUBPART H OF THIS PART ^a—Continued

Reference (section of subpart H of this part)	Description	Comment
63.181(c)	Visual inspection documentation	Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9). Except for § 63.181(d)(8). This subsection does not apply to subpart CC.
63.181(d)	Leak detection record requirements	
63.181(e)	Compliance requirements for pressure tests for batch product process equipment trains.	
63.181(f)	Compressor compliance test records.	
63.181(g)	Closed-vent systems and control device record requirements.	
63.181(h)	Process unit quality improvement program records.	
63.181(i)	Heavy liquid service determination record.	
63.181(j)	Equipment identification record.	
63.181(k)	Enclosed-vented process unit emission limitation record requirements.	
63.182(a)	Reports.	
63.182(b)	Initial notification report requirements.	Not required.
63.182(c)	Notification of compliance status report ..	
63.182(d)	Periodic report	Except in § 63.182(c); change “within 90 days of the compliance dates” to “within 150 days of the compliance dates”; except in §§ 63.182 (c)(2) and (c)(4). Except for §§ 63.182 (d)(2)(vii), (d)(2)(viii), and (d)(3).

^aThis table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 4.—GASOLINE DISTRIBUTION EMISSION POINT RECORDKEEPING AND REPORTING REQUIREMENTS ^a

Reference (section of subpart R of this part)	Description	Comment
63.428(b)	Records of test results for each gasoline cargo tank loaded at the facility.	Required to be submitted with the periodic report required under 40 CFR part 63 subpart CC.
63.428(c)	Continuous monitoring data recordkeeping requirements.	
63.428(g)(1)	Semiannual report loading rack information.	
63.428 (h)(1) through (h)(3)	Excess emissions report loading rack information.	

^aThis table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 5.—MARINE VESSEL LOADING AND UNLOADING OPERATIONS RECORDKEEPING AND REPORTING REQUIREMENTS ^a

Reference (section of subpart Y of this part)	Description	Comment
63.566(a)	Performance test/site test plan	The information required under this paragraph is to be submitted with the notification of compliance status report required under 40 CFR part 63 subpart CC.
63.566(b)	Performance test data requirements	
63.567(a)	General Provisions (subpart A) applicability	
63.567(c)	Vent system valve bypass recordkeeping requirements	
63.567(d)	Continuous equipment monitoring recordkeeping requirements	
63.567(e)	Flare recordkeeping requirements	

TABLE 5.—MARINE VESSEL LOADING AND UNLOADING OPERATIONS RECORDKEEPING AND REPORTING REQUIREMENTS ^a—Continued

Reference (section of subpart Y of this part)	Description	Comment
63.567(f)	Quarterly report requirements	The information required under this paragraph is to be submitted with the periodic report required under 40 CFR part 63 subpart CC.
63.567(g)	Marine vessel vapor-tightness documentation	
63.567(h)	Documentation file maintenance	
63.567(i)	Emission estimation reporting and recordkeeping procedures	

^aThis table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC ^a

Reference	Applies to subpart CC	Comment
63.1(a)(1)	Yes	Subpart CC (this table) specifies applicability of each paragraph in subpart A to subpart CC.
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	No	
63.1(a)(5)–63.1(a)(9)	No	Subpart CC and other cross-referenced subparts specify calendar or operating day.
63.1(a)(10)	No	
63.1(a)(11)	Yes	Subpart CC specifies its own applicability.
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	No	Subpart CC explicitly specifies requirements that apply.
63.1(b)(2)	Yes	
63.1(b)(3)	No	
63.1(c)(1)	No	
63.1(c)(2)	No	Area sources are not subject to subpart CC.
63.1(c)(3)	No	
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(d)	No	Except that sources are not required to submit notifications overridden by this table.
63.1(e)	No	
63.2	Yes	
63.3	No	
63.4(a)(1)–63.4(a)(3)	Yes	§ 63.641 of subpart CC specifies that if the same term is defined in subparts A and CC, it shall have the meaning given in subpart CC.
63.4(a)(4)	No	
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	Reserved.
63.5(a)(1)	Yes	
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	Except the cross-reference to § 63.9(b) is changed to § 63.9(b) (4) and (5). Subpart CC overrides § 63.9 (b)(2) and (b)(3).
63.5(c)	No	
63.5(d)(1)(i)	Yes	

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC ^a—Continued

Reference	Applies to subpart CC	Comment
63.5(d)(1)(ii)	Yes	Except that for affected sources subject to subpart CC, emission estimates specified in § 63.5(d)(1)(ii)(H) are not required.
63.5(d)(1)(iii)	No	Subpart CC requires submittal of the notification of compliance status report in § 63.654(e).
63.5(d)(2)	No	
63.5(d)(3)	Yes	Except § 63.5(d)(3)(ii) does not apply.
63.5(d)(4)	Yes	
63.5(e)	Yes	
63.5(f)(1)	Yes	
63.5(f)(2)	Yes	Except that the “60 days” in the cross-referenced § 63.5(d)(1) is changed to “90 days,” and the cross-reference to (b)(2) does not apply.
63.6(a)	Yes	
63.6(b)(1)	No	Subpart CC specifies compliance dates for sources subject to subpart CC.
63.6(b)(2)	No	
63.6(b)(3)	Yes	
63.6(b)(4)	No	May apply when standards are proposed under section 112(f) of the Clean Air Act.
63.6(b)(5)	No	§ 63.654(d) of subpart CC includes notification requirements.
63.6(b)(6)	No	
63.6(b)(7)	No	
63.6(c)(1)	No	§ 63.640 of subpart CC specifies the compliance date.
63.6(c)(2)–63.6(c)(4)	No	
63.6(c)(5)	Yes	
63.6(d)	No	
63.6(e)	Yes	Does not apply to Group 2 emission points. ^b
63.6(f)(1)	Yes	
63.6(f)(2)(i)	Yes	
63.6(f)(2)(ii)	Yes	Subpart CC specifies the use of monitoring data in determining compliance with subpart CC.
63.6(f)(2)(iii) (A), (B), and (C)	Yes	
63.6(f)(2)(iii)(D)	No	
63.6(f)(2)(iv)	Yes	
63.6(f)(2)(v)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h) (1) and (2)	Yes	
63.6(h) (4) and (5)	No	Visible emission requirements and timing in subpart CC.
63.6(h)(6)	Yes	
63.6(h) (7) through (9)	No	Subpart CC does not require opacity standards.
63.6(i)	Yes	Except for § 63.6(i)(15), which is reserved.
63.6(j)	Yes	
63.7(a)(1)	No	Subpart CC specifies required testing and compliance demonstration procedures.
63.7(a)(2)	No	Test results must be submitted in the notification of compliance status report due 150 days after compliance date, as specified in § 63.654(d) of subpart CC.
63.7(a)(3)	Yes	
63.7(b)	No	
63.7(c)	No	
63.7(d)	Yes	
63.7(e)(1)	Yes	
63.7(e)(2)	Yes	
63.7(e)(3)	No	Subpart CC specifies test methods and procedures.
63.7(e)(4)	Yes	
63.7(f)	No	Subpart CC specifies applicable methods and provides alternatives.
63.7(g)	No	Performance test reporting specified in § 63.654(d).
63.7(h)(1)	Yes	
63.7(h)(2)	Yes	
63.7(h)(3)	Yes	Yes, except site-specific test plans shall not be required, and where § 63.7(g)(3) specifies submittal by the date the site-specific test plan is due, the date shall be 90 days prior to the notification of compliance status report in § 63.654(d).

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC ^a—Continued

Reference	Applies to subpart CC	Comment
63.7(h)(4)	No	
63.7(h)(5)	Yes	
63.8(a)	No	
63.8(b)(1)	Yes	
63.8(b)(2)	No	Subpart CC specifies locations to conduct monitoring.
63.8(b)(3)	Yes	
63.8(c)(1)(i)	Yes	
63.8(c)(1)(ii)	No	Addressed by periodic reports in § 63.654(e) of subpart CC.
63.8(c)(1)(iii)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	No	Subpart CC specifies monitoring frequency in § 63.641 and § 63.654(g)(3) of subpart CC.
63.8(c)(5)—63.8(c)(8)	No	
63.8(d)	No	
63.8(e)	No	
63.8(f)(1)	Yes	
63.8(f)(2)	Yes	
63.8(f)(3)	Yes	
63.8(f)(4)(i)	No	Timeframe for submitting request is specified in § 63.654(f)(4) of subpart CC.
63.8(f)(4)(ii)	Yes	
63.8(f)(4)(iii)	No	
63.8(f)(5)(i)	Yes	
63.8(f)(5)(ii)	No	
63.8(f)(5)(iii)	Yes	
63.8(f)(6)	No	Subpart CC does not require continuous emission monitors.
63.8(g)	No	Subpart CC specifies data reduction procedures in § 63.654(h)(3).
63.9(a)	Yes	Except that the owner or operator does not need to send a copy of each notification submitted to the Regional Office of the EPA as stated in § 63.9(a)(4)(ii).
63.9(b)(1)(i)	No	Specified in § 63.654(d)(2) of subpart CC.
63.9(b)(1)(ii)	No	
63.9(b)(2)	No	An initial notification report is not required under subpart CC.
63.9(b)(3)	No	
63.9(b)(4)	Yes	Except that the notification in § 63.9(b)(4)(i) shall be submitted at the time specified in § 63.654(d)(2) of subpart CC.
63.9(b)(5)	Yes	Except that the notification in § 63.9(b)(5) shall be submitted at the time specified in § 63.654(d)(2) of subpart CC.
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	No	
63.9(f)	No	
63.9(g)	No	
63.9(h)	No	Subpart CC § 63.652(d) specifies notification of compliance status report requirements.
63.9(i)	Yes	
63.9(j)	No	
63.10(a)	Yes	
63.10(b)(1)	No	§ 63.644(d) of subpart CC specifies record retention requirements.
63.10(b)(2)(i)	Yes	
63.10(b)(2)(ii)	Yes	
63.10(b)(2)(iii)	No	
63.10(b)(2)(iv)	Yes	
63.10(b)(2)(v)	Yes	
63.10(b)(2)(vi)—(ix)	No	
63.10(b)(2)(x)	Yes	
63.10(b)(2)(xii)—(xiv)	No	
63.10(b)(3)	No	
63.10(c)	No	
63.10(d)(1)	No	
63.10(d)(2)	No	§ 63.654(d) of subpart CC specifies performance test reporting.

TABLE 6.—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC ^a—Continued

Reference	Applies to subpart CC	Comment
63.10(d)(3)	No	Except that reports required by § 63.10(d)(5)(i) may be submitted at the same time as periodic reports specified in § 63.654(e) of subpart CC.
63.10(d)(4)	Yes	
63.10(d)(5)(i)	Yes ^b	
63.10(d)(5)(ii)	Yes ^b	
63.10(e)	No	
63.10(f)	Yes	
63.11–63.15	Yes	

^aWherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

^bThe plan, and any records or reports of startup, shutdown, and malfunction do not apply to Group 2 emission points.

TABLE 7.—FRACTION MEASURED (F_m), FRACTION EMITTED (F_e), AND FRACTION REMOVED (F_r) FOR HAP COMPOUNDS IN WASTEWATER STREAMS

Chemical name	CAS No. ^a	F_m	F_e	F_r
Benzene	71432	1.00	0.80	0.99
Biphenyl	92524	0.86	0.45	0.99
Butadiene (1,3-)	106990	1.00	0.98	0.99
Carbon disulfide	75150	1.00	0.92	0.99
Cumene	98828	1.00	0.88	0.99
Dichloroethane (1,2-) (Ethylene dichloride)	107062	1.00	0.64	0.99
Ethylbenzene	100414	1.00	0.83	0.99
Hexane	110543	1.00	1.00	0.99
Methanol	67561	0.85	0.17	0.31
Methyl ethyl ketone (2-Butanone)	78933	0.99	0.48	0.95
Methyl isobutyl ketone (Hexone)	108101	0.98	0.53	0.99
Methyl tert-butyl ether	1634044	1.00	0.57	0.99
Naphthalene	91203	0.99	0.51	0.99
Trimethylpentane (2,2,4-)	540841	1.00	1.00	0.99
Xylene (m-)	108383	1.00	0.82	0.99
Xylene (o-)	95476	1.00	0.79	0.99
Xylene (p-)	106423	1.00	0.82	0.99

^aCAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 8.—VALVE MONITORING FREQUENCY FOR PHASE III

Performance level	Valve monitoring frequency
Leaking valves ^a (%)	
≥4	Monthly or QIP. ^b
<4	Quarterly.
<3	Semiannual.
<2	Annual.

^aPercent leaking valves is calculated as a rolling average of two consecutive monitoring periods.

^bQIP=Quality improvement program. Specified in § 63.175 of subpart H of this part.

TABLE 9.—VALVE MONITORING FREQUENCY FOR ALTERNATIVE

Performance level	Valve monitoring frequency under § 63.649 alternative
Leaking valves ^a (%)	
≥5	Monthly or QIP. ^b
<5	Quarterly.
<4	Semiannual.
<3	Annual.

^aPercent leaking valves is calculated as a rolling average of two consecutive monitoring periods.

^bQIP=Quality improvement program. Specified in § 63.175 of subpart H of this part.

TABLE 10.—MISCELLANEOUS PROCESS VENTS—MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Thermal incinerator	Firebox temperature ^b (63.644(a)(1)(i)).	<ol style="list-style-type: none"> 1. Continuous records^c. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS^d. 3. Record the daily average firebox temperature for each operating day^e. 4. Report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected^f—PR^g.
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed (63.644(a)(1)(ii)).	<ol style="list-style-type: none"> 1. Continuous records^c. 2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS^d. 3. Record the daily average upstream temperature and temperature difference across the catalyst bed for each operating day^e. 4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR^g. 5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR^g. 6. Report all operating days when insufficient monitoring data are collected^f.
Boiler or process heater with a design heat capacity less than 44 megawatts where the vent stream is <i>not</i> introduced into the flame zone ^{h,i} .	Firebox temperature ^b (63.644(a)(4)).	<ol style="list-style-type: none"> 1. Continuous records^c. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS^d. 3. Record the daily average firebox temperature for each operating day^e. 4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected^f—PR^g.
Flare	Presence of a flame at the pilot light (63.644(a)(2)).	<ol style="list-style-type: none"> 1. Hourly records of whether the monitor was continuously operating and whether a pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS^d. 3. Record the times and durations of all periods when all pilot flames for a flare are absent or the monitor is not operating. 4. Report the times and durations of all periods when all pilot flames for a flare are absent or the monitor is not operating.
All control devices	Presence of flow diverted to the atmosphere from the control device (63.644(c)(1)) or. Monthly inspections of sealed valves [63.644(c)(2)].	<ol style="list-style-type: none"> 1. Hourly records of whether the flow indicator was operating and whether flow was detected at any time during each hour. 2. Record and report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR^g. 1. Records that monthly inspections were performed. 2. Record and report all monthly inspections that show the valves are not closed or the seal has been changed—PR^g.

^aRegulatory citations are listed in parentheses.^bMonitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.^c"Continuous records" is defined in § 63.641.

^aNCS = Notification of compliance status report described in § 63.654.
^bThe daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.
^cWhen a period of excess emission is caused by insufficient monitoring data, as described in § 63.654(g)(6)(i) (C) or (D), the duration of the period when monitoring data were not collected shall be included in the Periodic Report.
^dPR = Periodic Reports described in § 63.654(g).
^eNo monitoring is required for boilers and process heaters with a design heat capacity ≥44 megawatts or for boilers and process heaters where all vent streams are introduced into the flame zone. No recordkeeping or reporting associated with monitoring is required for such boilers and process heaters.
^fProcess vents that are routed to refinery fuel gas systems are not regulated under this subpart. No monitoring, recordkeeping, or reporting is required for boilers and process heaters that combust refinery fuel gas.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, 29882, June 12, 1996]

Subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations

SOURCE: 61 FR 34158, July 1, 1996, unless otherwise noted.

§ 63.680 Applicability and designation of affected sources.

(a) The provisions of this subpart apply to the owner and operator of a plant site for which both of the conditions specified in paragraphs (a)(1) and (a)(2) of this section are applicable. If either one of these conditions does not apply to the plant site, then the owner and operator of the plant site are not subject to the provisions of this subpart.

(1) The plant site is a major source of hazardous air pollutant (HAP) emissions as defined in 40 CFR 63.2.

(2) At the plant site is located one or more of operations that receives off-site materials as specified in paragraph (b) of this section and the operations is one of the following waste management operations or recovery operations as specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section.

(i) A waste management operation that receives off-site material and the operation is regulated as a hazardous waste treatment, storage, and disposal facility (TSDF) under either 40 CFR part 264 or part 265.

(ii) A waste management operation that treats wastewater which is an off-site material and the operation is exempted from regulation as a hazardous waste treatment, storage, and disposal facility under 40 CFR 264.1(g)(6) or 40 CFR 265.1(c)(10).

(iii) A waste management operation that treats wastewater which is an off-

site material and the operation meets both of the following conditions:

(A) The operation is subject to regulation under either section 402 or 307(b) of the Clean Water Act but is not owned by a “state” or “municipality” as defined by section 502(3) and 502(4), respectively, of the Clean Water Act; and

(B) The treatment of wastewater received from off-site is the predominant activity performed at the plant site.

(iv) A recovery operation that recycles or reprocesses hazardous waste which is an off-site material and the operation is exempted from regulation as a hazardous waste treatment, disposal, and storage facility under 40 CFR 264.1(g)(2) or 40 CFR 265.1(c)(6).

(v) A recovery operation that recycles or reprocesses used solvent which is an off-site material and the operation is not part of a chemical, petroleum, or other manufacturing process that is required to use air emission controls by another subpart of 40 CFR part 63.

(vi) A recovery operation that re-refines or reprocesses used oil which is an off-site material and the operation is regulated under 40 CFR 279 subpart F—Standards for Used Oil Processors and Refiners.

(b) For the purpose of implementing this subpart, an off-site material is a material that meets all of the criteria specified in paragraph (b)(1) of this section but is not one of the materials specified in paragraph (b)(2) of this section.

(1) An off-site material is a material that meets all of the criteria specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section. If any one of these criteria do not apply to the material, then the material is not an off-site material subject to this subpart.

(i) The material is a waste, used oil, or used solvent as defined in § 63.681 of this subpart;

(ii) The material is not produced or generated within the plant site, but the material is delivered, transferred, or otherwise moved to the plant site from a location outside the boundaries of the plant site; and

(iii) The material contains one or more of the hazardous air pollutants (HAP) listed in Table 1 of this subpart based on the composition of the material at the point-of-delivery, as defined in § 63.681 of this subpart.

(2) For the purpose of implementing this subpart, the following materials are not off-site materials:

(i) Household waste as defined in 40 CFR 258.2.

(ii) Radioactive mixed waste managed in accordance with all applicable regulations under Atomic Energy Act and Nuclear Waste Policy Act authorities.

(iii) Waste that is generated as a result of implementing remedial activities required under the Resource Conservation and Recovery Act (RCRA) corrective action authorities (RCRA sections 3004(u), 3004(v), or 3008(h)), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorities, or similar Federal or State authorities.

(iv) Waste containing HAP that is generated by residential households (e.g., old paint, home garden pesticides) and subsequently is collected as a community service by government agencies, businesses, or other organizations for the purpose of promoting the proper disposal of this waste.

(v) Waste that is generated by or transferred from units complying with all applicable regulations under 40 CFR 63 subparts F and G—National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry.

(vi) Waste that is generated by or transferred from units complying with all applicable requirements specified by § 61.342(b) under 40 CFR 61 subpart FF—National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is

equal to or greater than 10 megagrams per year.

(vii) Ship ballast water pumped from a ship to an onshore wastewater treatment facility.

(c) For the purpose of implementing this subpart, the affected sources at a plant site subject to this subpart are as follows:

(1) Off-site material management units. The affected source is the group of tanks, containers, oil-water or organic-water separators, surface impoundments, and transfer systems used to manage off-site material in each of the waste management operations and recovery operations specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section that is located at the plant site.

(2) Process vents. The affected source is the group of process vents on units used to manage off-site material in each of the waste management operations and recovery operations specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section that is located at the plant site.

(3) Equipment leaks. The affected source is the group of equipment specified in § 63.683(b)(2)(i) through (b)(2)(iii) of this subpart that is used to handle off-site material in each of the waste management operations and recovery operations specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section that is located at the plant site.

(d) Owners and operators of plant sites at which are located affected sources subject to this subpart are exempted from the requirements of §§ 63.682 through 63.699 of this subpart in situations when the total annual quantity of the HAP that is contained in the off-site material received at the plant site is less than 1 megagram per year. This total annual HAP quantity for the off-site material shall be based on the total quantity of the HAP listed in Table 1 of this subpart as determined at the point-of-delivery for each off-site material stream. Documentation shall be prepared by the owner or operator and maintained at the plant site to support the initial determination of the total annual HAP quantity for the off-site material. The owner or operator shall perform a new determination when the extent of changes

to the quantity or composition of the off-site material received at the plant site could cause the total annual HAP quantity in the off-site material to the exceed limit of 1 megagram per year.

(e) *Compliance dates*—(1) *Existing sources*. The owner or operator of an affected source that commenced construction or reconstruction before October 13, 1994, shall achieve compliance with the provisions of the subpart no later than July 1, 1999 unless an extension has been granted by the Administrator as provided in 40 CFR 63.6(i).

(2) *New sources*. The owner or operator of an affected source for which construction or reconstruction commences on or after October 13, 1994, shall achieve compliance with the provisions of this subpart by July 1, 1996 or upon initial startup of operations, whichever date is later as provided in 40 CFR 63.6(b). For the purpose of implementing this subpart, a waste management operation or recovery operation that commenced construction or reconstruction before October 13, 1994, and receives off-site material for the first time after July 1, 1999 is a new source, and the owner or operator of this affected source shall achieve compliance with the provisions of this subpart upon the first date that the waste management operation or recovery operation begins to manage the off-site material.

(f) The provisions of 40 CFR part 63, subpart A—General Provisions that apply and those that do not apply to this subpart are specified in Table 2 of this subpart.

§ 63.681 Definitions.

All terms used in this subpart shall have the meaning given to them in this section, 40 CFR 63.2 of this part, and the Act.

Boiler means an enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator or a process heater.

Closed-vent system means a system that is not open to the atmosphere and is composed of hard-piping, ductwork, connections, and, if necessary, fans, blowers, or other flow-inducing devices that convey gas or vapor from an emission point to a control device.

Closure device means a cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air pollutant emissions to the atmosphere by blocking an opening in a cover when the device is secured in the closed position. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

Container means a portable unit used to hold material. Examples of containers include but are not limited to drums, dumpsters, roll-off boxes, bulk cargo containers commonly known as “portable tanks” or “totes”, cargo tank trucks, and tank rail cars.

Continuous record means documentation of data values measured at least once every 15 minutes and recorded at the frequency specified in this subpart.

Continuous recorder means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minutes or more frequent block averages.

Continuous seal means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

Control device means equipment used for recovering or oxidizing organic vapors. Examples of such equipment include but are not limited to carbon adsorbers, condensers, vapor incinerators, flares, boilers, and process heaters.

Cover means a device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the off-site material managed in a unit. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural

features permanently integrated into the design of the unit.

Emission point means an individual tank, surface impoundment, container, oil-water or organic-water separator, transfer system, process vent, or enclosure.

Enclosure means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapor through a closed vent system to a control device.

External floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a tank with no fixed roof.

Fixed roof means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the liquid managed in the unit.

Flame zone means the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope.

Floating roof means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the liquid being contained, and is equipped with a continuous seal.

HAP means hazardous air pollutants.

Hard-piping means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

Hazardous waste means a waste that is determined to be hazardous under the Resource Conservation and Recovery Act (PL 94-580) (RCRA), as implemented by 40 CFR parts 260 and 261.

Individual drain system means a stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying wastewater streams or residuals. For the purpose of this subpart, an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of collecting rainfall runoff (e.g., stormwater sewer system) and is seg-

regated from all other individual drain systems.

Internal floating roof means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it inside a tank that has a fixed roof).

Light-material service means the container is used to manage an off-site material for which both of the following conditions apply: the vapor pressure of one or more of the organic constituents in the off-site material is greater than 0.3 kilopascals (kPa) at 20 °C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

Liquid-mounted seal means a foam- or liquid-filled continuous seal mounted in contact with the liquid in a unit.

Maximum HAP vapor pressure means the sum of the individual HAP equilibrium partial pressure exerted by an off-site material at the temperature equal to either: the local maximum monthly average temperature as reported by the National Weather Service when the off-site material is stored or treated at ambient temperature; or the highest calendar-month average temperature of the off-site material when the off-site material is stored at temperatures above the ambient temperature or when the off-site material is stored or treated at temperatures below the ambient temperature. For the purpose of this subpart, maximum HAP vapor pressure is determined using the procedures specified in § 63.694(j) of this subpart.

Metallic shoe seal means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

No detectable organic emissions means no escape of organics to the atmosphere as determined using the procedure specified in § 63.694(k) of this subpart.

Off-site material means a material that meets all of the criteria specified

in paragraph § 63.680(b)(1) of this subpart but is not one of the materials specified in § 63.680(b)(2) of this subpart.

Off-site material management unit means a tank, container, surface impoundment, oil-water separator, organic-water separator, or transfer system used to manage off-site material.

Off-site material stream means an off-site material produced or generated by a particular process or source such that the composition and form of the material comprising the stream remain consistent. An off-site material stream may be delivered, transferred, or otherwise moved to the plant site in a continuous flow of material (e.g., wastewater flowing through a pipeline) or in a series of discrete batches of material (e.g., a truckload of drums all containing the same off-site material or multiple bulk truck loads of an off-site material produced by the same process).

Oil-water separator means a separator as defined for this subpart that is used to separate oil from water.

Operating parameter value means a minimum or maximum value established for a control device or treatment process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

Organic-water separator means a separator as defined for this subpart that is used to separate organics from water.

Plant site means all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof. A unit or group of units within a contiguous property that are not under common control (e.g., a wastewater treatment unit or solvent recovery unit located at the site but is sold to a different company) is a different plant site.

Point-of-delivery means the point at the boundary or within the plant site where the owner or operator first accepts custody, takes possession, or assumes responsibility for the management of an off-site material stream

managed in a waste management operation or recovery operation specified in § 63.680 (a)(2)(i) through (a)(2)(vi) of this subpart. The characteristics of an off-site material stream are determined prior to combining the off-site material stream with other off-site material streams or with any other materials.

Point-of-treatment means a point where the off-site material to be treated in accordance with § 63.683(b)(1)(ii) of this subpart exits the treatment process. The characteristics shall be determined before this material is conveyed, handled, or otherwise managed in such a manner that the material has the potential to volatilize to the atmosphere.

Process heater means an enclosed combustion device that transfers heat released by burning fuel directly to process streams or to heat transfer liquids other than water.

Process vent means any open-ended pipe, stack, or duct that allows the passage of gases, vapors, or fumes to the atmosphere and this passage is caused by mechanical means (such as compressors or vacuum-producing systems) or by process-related means (such as volatilization produced by heating). For the purpose of this subpart, a process vent is not a stack or duct used to exhaust combustion products from a boiler, furnace, process heater, incinerator, or other combustion device.

Recovery operation means the collection of off-site material management units, process vents, and equipment components used at a plant site to manage an off-site material stream from the point-of-delivery through the point where the material has been recycled, reprocessed, or re-refined to obtain the intended product or to remove the physical and chemical impurities of concern.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is

not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials.

Separator means a waste management unit, generally a tank, used to separate oil or organics from water. A separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to any additional treatment units such as an air flotation unit clarifier or biological treatment unit. Examples of a separator include, but are not limited to, an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

Single-seal system means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

Surface impoundment means a unit that is a natural topographical depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquids. Examples of surface impoundments include holding, storage, settling, and aeration pits, ponds, and lagoons.

Tank means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed

to hold an accumulation of liquids or other materials.

Transfer system means a stationary system for which the predominant function is to convey liquids or solid materials from one point to another point within a waste management operation or recovery operation. For the purpose of this subpart, the conveyance of material using a container (as defined for this subpart) or a self-propelled vehicle (e.g., a front-end loader) is not a transfer system. Examples of a transfer system include but are not limited to a pipeline, an individual drain system, a gravity-operated conveyor (such as a chute), and a mechanically-powered conveyor (such as a belt or screw conveyor).

Temperature monitoring device means a piece of equipment used to monitor temperature and having an accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius ($^{\circ}\text{C}$) or ± 1.2 degrees $^{\circ}\text{C}$, whichever value is greater.

Treatment process means a process in which an off-site material stream is physically, chemically, thermally, or biologically treated to destroy, degrade, or remove hazardous air pollutants contained in the off-site material. A treatment process can be composed of a single unit (e.g., a steam stripper) or a series of units (e.g., a wastewater treatment system). A treatment process can be used to treat one or more off-site material streams at the same time.

Used oil means any oil refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities. This definition is the same definition of "used oil" in 40 CFR 279.1.

Used solvent means a solvent composed of a mixture of aliphatic hydrocarbons or a mixture of one and two ring aromatic hydrocarbons that has been used and as a result of such use is contaminated by physical or chemical impurities.

Vapor-mounted seal means a continuous seal that is mounted such that there is a vapor space between the liquid in the unit and the bottom of the seal.

Volatile organic hazardous air pollutant concentration or VOHAP concentration

means the fraction by weight of the HAP listed in Table 1 of this subpart that are contained in an off-site material. For the purpose of this subpart, VOHAP concentration is determined in accordance with the test methods and procedures specified in § 63.694 (b) and (c) of this subpart.

Waste means a material generated from industrial, commercial, mining, or agricultural operations or from community activities that is discarded, discharged, or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded or discharged.

Waste management operation means the collection of off-site material management units, process vents, and equipment components used at a plant site to manage an off-site material stream from the point-of-delivery to the point where the waste exits or is discharged from the plant site or the waste is placed for on-site disposal in a unit not subject to this subpart (e.g., a waste incinerator, a land disposal unit).

Waste stabilization process means any physical or chemical process used to either reduce the mobility of hazardous constituents in a waste or eliminate free liquids as determined by Test Method 9095—Paint Filter Liquids Test in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992. A waste stabilization process includes mixing the waste with binders or other materials, and curing the resulting waste and binder mixture. Other synonymous terms used to refer to this process are “waste fixation” or “waste solidification.” A waste stabilization process does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.

§ 63.682 [Reserved]

§ 63.683 Standards: General.

(a) This section applies to owners and operators of affected sources as defined in § 63.680(c) of this subpart.

(b) The owner or operator shall control the air emissions from each af-

ected source in accordance with the following requirements:

(1) For each off-site material management unit that is part of an affected source, the owner or operator shall perform one of the following except when the unit is exempted under provisions of paragraph (c) of this section:

(i) Install and operate air emission controls on the off-site material management unit in accordance with the standards specified in §§ 63.685 through 63.689 of this subpart, as applicable to the unit;

(ii) Treat the off-site material to remove or destroy the HAP in accordance with the treatment standards specified in § 63.684 of this subpart before placing the material in the off-site material management unit; or

(iii) Determine that the average VOHAP concentration of each off-site material stream managed in the off-site material unit remains at a level less than 500 parts per million by weight (ppmw) based on the HAP content of the off-site material stream at the point-of-delivery. The owner or operator shall perform an initial determination of the average VOHAP concentration of each off-site material stream using the procedures specified in § 63.694(b) of this subpart before the first time any portion of the off-site material stream is placed in the unit. Thereafter, the owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the off-site material stream.

(2) For each process vent that is part of an affected source, the owner or operator shall control the HAP emitted from the process vent by implementing one of the following control measures.

(i) Install and operate air emission controls on the process vent in accordance with the standards specified in § 63.690 of this subpart.

(ii) Determine that the average VOHAP concentration of each off-site material stream managed in the unit on which the process vent is used remains at a level less than 500 parts per million by weight (ppmw) based on the HAP content of the off-site material stream at the point-of-delivery. The

owner or operator shall perform an initial determination of the average VOHAP concentration of each off-site material stream using the procedures specified in § 63.694(b) of this subpart before the first time any portion of the off-site material stream is placed in the unit. Thereafter, the owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the off-site material stream.

(3) For each equipment component that is part of an affected source and meets all of the criteria specified in paragraphs (b)(3)(i) through (b)(3)(iii) of this section, the owner or operator shall control the HAP emitted from equipment leaks by implementing control measures in accordance with the standards specified in § 63.691 of this subpart.

(i) The equipment component contains or contacts off-site material having a total HAP concentration equal to or greater than 10 percent by weight;

(ii) The equipment piece is a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, or instrumentation system; and

(iii) The equipment piece is intended to operate 300 hours or more during a 12-month period.

(c) Exempted off-site material management units. An off-site material management unit is exempted from the requirements specified in paragraph (b) of this section when the unit meets any one of the exemptions provided in paragraphs (c)(1) through (c)(5) of this section.

(1) An off-site material management unit is exempted from the requirements specified in paragraph (b) of this section if the unit is also subject to another subpart under 40 CFR part 61 or 40 CFR part 63, and the owner or operator is controlling the HAP listed in Table 1 of this subpart that are emitted from the unit in compliance with the provisions specified in the other applicable subpart.

(2) One or more off-site material management units located at a plant site can be exempted from the requirements specified in paragraph (b) of this section at the discretion of the owner

or operator provided that the total annual quantity of HAP contained in the off-site material placed in the off-site material management units selected by the owner or operator to be exempted under this provision is less than 1 megagram per year. This total annual HAP quantity for the off-site material shall be based on the total quantity of the HAP listed in Table 1 of this subpart as determined at the point where the off-site material is placed in each exempted unit. For the off-site material management unit selected by the owner or operator to be exempted from the under this provision, the owner or operator shall meet the following requirements:

(i) Documentation shall be prepared by the owner or operator and maintained at the plant site to support the initial determination of the total annual HAP quantity of the off-site material. This documentation shall include identification of each off-site material management unit selected by the owner or operator to be exempted under paragraph (c)(2) of this section and the basis for determining the HAP content of the off-site material. The owner or operator shall perform a new determination when the extent of changes to the quantity or composition of the off-site material placed in the exempted units could cause the total annual HAP content in the off-site material to exceed 1 megagram per year.

(ii) Each of the off-site material management units exempted under paragraph (c)(2) of this section shall be permanently marked in such a manner that it can be readily identified as an exempted unit from the other off-site material management units located at the plant site.

(3) A tank or surface impoundment is exempted from the requirements specified in paragraph (b) of this section if the unit is used for a biological treatment process that destroys or degrades the HAP contained in the material entering the unit, such that either of the following conditions is met:

(i) The HAP reduction efficiency (R) for the process is equal to or greater than 95 percent, and the HAP biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The HAP reduction efficiency

(R) shall be determined using the procedure specified in § 63.694(g) of this subpart. The HAP biodegradation efficiency (R_{bio}) shall be determined in accordance with the requirements of § 63.694(h) of this subpart.

(ii) The total actual HAP mass removal rate (MR_{bio}) as determined in accordance with the requirements of § 63.694(i) of this subpart for the off-site material treated by the process is equal to or greater than the required HAP mass removal rate (RMR) as determined in accordance with the requirements of § 63.694(e) of this subpart.

(4) An off-site material management unit is exempted from the requirements specified in paragraph (b) of this section if the off-site material placed in the unit is a hazardous waste that meets the numerical concentration limits, applicable to the hazardous waste, as specified in 40 CFR part 268—Land Disposal Restrictions under both of the following tables:

- (i) Table “Treatment Standards for Hazardous Waste” in 40 CFR 268.40; and
- (ii) Table UTS—“Universal Treatment Standards” in 40 CFR 268.48.

(5) A tank used for bulk feed of off-site material to a waste incinerator is exempted from the requirements specified in paragraph (b) of this section if all of the following conditions are met:

(i) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF—National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(ii) The enclosure and control device serving the tank were installed and began operation prior to July 1, 1996; and

(iii) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other

mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” annually.

§ 63.684 Standards: Off-site material treatment.

(a) The provisions of this section apply to the treatment of off-site material to control air emissions for which § 63.683(b)(1)(ii) of this subpart references the requirements of this section for such treatment.

(b) The owner or operator shall remove or destroy the HAP contained in off-site material streams to be managed in the off-site material management unit in accordance with § 63.683(b)(1)(ii) of this subpart using a treatment process that continuously achieves, under normal operations, one of the following performance levels for the range of off-site material stream compositions and quantities expected to be treated:

(1) *VOHAP concentration.* The treatment process shall reduce the VOHAP concentration of the off-site material using a means, other than by dilution, to achieve one of the following performance levels, as applicable:

(i) In the case when every off-site material stream entering the treatment process has an average VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery, then the VOHAP concentration of the off-site material shall be reduced to a level that is less than 500 ppmw at the point-of-treatment.

(ii) In the case when the off-site material streams entering the treatment process include off-site material streams having average VOHAP concentrations less than 500 ppmw at the point-of-delivery, then the VOHAP concentration of the off-site material shall be reduced to a level at the point-of-treatment that is either:

(A) Less than the VOHAP concentration limit (C_R) established for the treatment process using the procedure specified in § 63.694(d) of this subpart; or

(B) Less than the lowest VOHAP concentration determined for each of the off-site material streams entering the treatment process as determined by the VOHAP concentration of the off-site material at the point-of-delivery.

(2) *HAP mass removal.* The treatment process shall achieve a performance level such that the total quantity of HAP actually removed from the off-site material stream (MR) is equal to or greater than the required mass removal (RMR) established for the off-site material stream using the procedure specified in § 63.694(e) of this subpart. The MR for the off-site material streams shall be determined using the procedures specified in § 63.694(f) of this subpart.

(3) *HAP reduction efficiency.* The treatment process shall achieve a performance level such that the total quantity of HAP in the off-site material stream is reduced to one of the following performance levels, as applicable:

(i) In the case when the owner or operator determines that off-site material stream entering the treatment process has an average VOHAP concentration less than 10,000 ppmw at the point-of-delivery, then the treatment process shall achieve a performance level such that the total quantity of HAP in the off-site material stream is reduced by 95 percent or more. The HAP reduction efficiency (R) for the treatment process shall be determined using the procedure specified in § 63.694(g) of this subpart. The average VOHAP concentration of the off-site material stream at the point-of-delivery shall be determined using the procedure specified in § 63.694(b) of this subpart.

(ii) In the case when the off-site material stream entering the treatment process has an average VOHAP concentration equal to or greater than 10,000 ppmw at the point-of-delivery, then the treatment process shall achieve a performance level such that the total quantity of HAP in the off-site material stream is reduced by 95 percent or more, and the average VOHAP concentration of the off-site material at the point-of-treatment is less than 100 parts per million by weight (ppmw). The HAP reduction ef-

iciency (R) for the treatment process shall be determined using the procedure specified in § 63.694(g) of this subpart. The average VOHAP concentration of the off-site material stream at the point-of-treatment shall be determined using the procedure specified in § 63.694(c) of this subpart.

(4) *Biological degradation.* The treatment process shall achieve either of the following performance levels:

(i) The HAP reduction efficiency (R) for the treatment process is equal to or greater than 95 percent, and the HAP biodegradation efficiency (R_{bio}) for the treatment process is equal to or greater than 95 percent. The HAP reduction efficiency (R) shall be determined using the procedure specified in § 63.694(g) of this subpart. The HAP biodegradation efficiency (R_{bio}) shall be determined in accordance with the requirements of § 63.694(h) of this subpart.

(ii) The total quantity of HAP actually removed from the off-site material stream by biological degradation (MR_{bio}) shall be equal to or greater than the required mass removal (RMR) established for the off-site material stream using the procedure specified in § 63.694(e) of this subpart. The MR_{bio} of the off-site material stream shall be determined using the procedures specified in § 63.694(i) of this subpart.

(5) *Incineration.* The HAP contained in the off-site material stream shall be destroyed using one of the following combustion devices:

(i) An incinerator for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270, and the incinerator is designed and operated in accordance with the requirements of 40 CFR 264 subpart O—Incinerators, or

(B) Has certified compliance with the interim status requirements of 40 CFR 265 subpart O—Incinerators.

(ii) A boiler or industrial furnace for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270, and the combustion unit is designed and operated in accordance with the requirements of 40 CFR part 266 subpart H—Hazardous Waste Burned in Boilers and Industrial Furnaces, or

(B) Has certified compliance with the interim status requirements of 40 CFR

part 266 subpart H Hazardous Waste Burned in Boilers and Industrial Furnaces.

(c) For a treatment process that removes the HAP from the off-site material by a means other than thermal destruction or biological degradation to achieve one of the performance levels specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, the owner or operator shall manage the HAP removed from the off-site material in such a manner to minimize release of these HAP to the atmosphere, to the extent practical. Examples of HAP emission control measures that meet the requirements of this paragraph include managing the HAP removed from the off-site material in units that use air emission controls in accordance with the standards specified in §§ 63.685 through 63.689 of this subpart, as applicable to the unit.

(d) When the owner or operator treats the off-site material to meet one of the performance levels specified in paragraphs (b)(1) through (b)(4) of this section, the owner or operator shall demonstrate that the treatment process achieves the selected performance level for the range of expected off-site material stream compositions expected to be treated. An initial demonstration shall be performed as soon as possible but no later than 30 days after first time an owner or operator begins using the treatment process to manage off-site material streams in accordance with the requirements of § 63.683(b)(1)(ii) of this subpart. Thereafter, the owner or operator shall review and update, as necessary, this demonstration at least once every 12 months following the date of the initial demonstration.

(e) When the owner or operator treats the off-site material to meet one of the performance levels specified in paragraphs (b)(1) through (b)(4) of this section, the owner or operator shall ensure that the treatment process is achieving the applicable performance requirements by continuously monitoring the operation of the process when it is used to treat off-site material:

(1) A continuous monitoring system shall be installed and operated for each treatment that measures operating parameters appropriate for the treatment

process technology. This system shall include a continuous recorder that records the measured values of the selected operating parameters. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The continuous recorder shall be a data recording device that records either an instantaneous data value at least once every 15 minutes or an average value for intervals of 15 minutes or less.

(2) For each monitored operating parameter, the owner or operator shall establish a minimum operating parameter value or a maximum operating parameter value, as appropriate, to define the range of conditions at which the treatment process must be operated to continuously achieve the applicable performance requirements of this section.

(3) When the treatment process is operating to treat off-site material, the owner or operator shall inspect the data recorded by the continuous monitoring system on a routine basis and operate the treatment process such that the actual value of each monitored operating parameter is greater than the minimum operating parameter value or less than the maximum operating parameter value, as appropriate, established for the treatment process.

(f) The owner or operator shall maintain records for each treatment process in accordance with the requirements of § 63.696 of this subpart.

(g) The owner or operator shall prepare and submit reports for each treatment process in accordance with the requirements of § 63.697 of this subpart.

(h) The Administrator may at any time conduct or request that the owner or operator conduct testing necessary to demonstrate that a treatment process is achieving the applicable performance requirements of this section. The testing shall be conducted in accordance with the applicable requirements of this section. The Administrator may elect to have an authorized representative observe testing conducted by the owner or operator.

§ 63.685 Standards: Tanks.

(a) The provisions of this section apply to the control of air emissions from tanks for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from each tank subject to this section in accordance with the following applicable requirements:

(1) For a tank that is part of an existing affected source but the tank is not used to manage off-site material having a maximum organic vapor pressure that is equal to or greater than 76.6 kPa nor is the tank used for a waste stabilization process as defined in § 63.681 of this subpart, the owner or operator shall determine whether the tank is required to use either Tank Level 1 controls or Tank Level 2 controls as specified for the tank by Table 3 of this subpart based on the off-site material maximum HAP vapor pressure and the tank's design capacity. The owner or operator shall control air emissions from a tank required by Table 3 to use Tank Level 1 controls in accordance with the requirements of paragraph (c) of this section. The owner or operator shall control air emissions from a tank required by Table 3 to use Tank Level 2 controls in accordance with the requirements of paragraph (d) of this section.

(2) For a tank that is part of a new affected source but the tank is not used to manage off-site material having a maximum organic vapor pressure that is equal to or greater than 76.6 kPa nor is the tank used for a waste stabilization process as defined in § 63.681 of this subpart, the owner or operator shall determine whether the tank is required to use either Tank Level 1 controls or Tank Level 2 controls as specified for the tank by Table 4 of this subpart based on the off-site material maximum HAP vapor pressure and the tank's design capacity. The owner or operator shall control air emissions from a tank required by Table 4 to use Tank Level 1 controls in accordance with the requirements of paragraph (c) of this section. The owner or operator shall control air emissions from a tank required by Table 4 to use Tank Level 2 controls in accordance with the re-

quirements of paragraph (d) of this section.

(3) For a tank that is used for a waste stabilization process, the owner or operator shall control air emissions from the tank by using Tank Level 2 controls in accordance with the requirements of paragraph (d) of this section.

(4) For a tank that manages off-site material having a maximum organic vapor pressure that is equal to or greater than the 76.6 kPa, the owner or operator shall control air emissions from the tank by venting the tank through a closed-vent system to a control device in accordance with the requirements of paragraph (g) of this section.

(c) Owners and operators controlling air emissions from a tank using Tank Level 1 controls shall meet the following requirements:

(1) The owner or operator shall determine the maximum HAP vapor pressure for an off-site material to be managed in the tank using Tank Level 1 controls before the first time the off-site material is placed in the tank. The maximum HAP vapor pressure shall be determined using the procedures specified in § 63.694(j) of this subpart. Thereafter, the owner or operator shall perform a new determination whenever changes to the off-site material managed in the tank could potentially cause the maximum HAP vapor pressure to increase to a level that is equal to or greater than the maximum HAP vapor pressure limit for the tank design capacity category specified in Table 3 or Table 4 of this subpart, as applicable to the tank.

(2) The owner or operator shall control air emissions from the tank using a fixed-roof in accordance with the provisions specified in 40 CFR 63 subpart OO—National Emission Standards for Tanks—Level 1.

(d) Owners and operators controlling air emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (e) of this section;

(2) A tank equipped with an external floating roof in accordance with the requirements specified in paragraph (f) of this section;

(3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (g) of this section;

(4) A pressure tank designed and operated in accordance with the requirements specified in paragraph (h) of this section; or

(5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in paragraph (i) of this section.

(e) The owner or operator who elects to control air emissions from a tank using a fixed-roof with an internal floating roof shall meet the requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(i) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

(A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in §63.681 of this subpart; or

(B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(iii) The internal floating roof shall meet the following specifications:

(A) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(B) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

(C) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

(D) Each automatic bleeder vent and rim space vent shall be gasketed.

(E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(F) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(ii) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(iii) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(3) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified in §63.695(b) of this subpart.

(f) The owner or operator who elects to control tank emissions by using an external floating roof shall meet the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) The owner or operator shall design the external floating roof in accordance with the following requirements:

(i) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The floating roof shall be equipped with two continuous seals, one above the other, between the wall

of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in § 63.681 of this subpart. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.

(B) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(iii) The external floating roof shall be meet the following specifications:

(A) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

(B) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

(C) Each access hatch and each gauge float wells shall be equipped with covers designed to be bolted or fastened when the cover is secured in the closed position.

(D) Each automatic bleeder vent and each rim space vents shall be equipped with a gasket.

(E) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(F) Each unslotted and slotted guide pole well shall be equipped with a

gasketed sliding cover or a flexible fabric sleeve seal.

(G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

(H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the surface from the atmosphere.

(I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

(iii) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(iv) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(v) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(vi) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(vii) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

(viii) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(3) The owner or operator shall inspect the external floating roof in accordance with the procedures specified in § 63.695(b) of this subpart.

(g) The owner or operator who controls tank air emissions by venting to a control device shall meet the requirements specified in paragraphs (g)(1) through (g)(3) of this section.

(1) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

(ii) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.

(iii) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the off-site material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 63.693 of this subpart.

(2) Whenever an off-site material is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(i) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or re-install the cover, as applicable, to the tank.

(B) To remove accumulated sludge or other residues from the bottom of separator.

(ii) Opening of a safety device, as defined in § 63.681 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the procedures specified in § 63.695 of this subpart.

(h) The owner or operator who elects to control tank air emissions by using a pressure tank shall meet the following requirements.

(1) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(2) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in § 63.694(k) of this subpart.

(3) Whenever an off-site material is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except in the event that opening of a safety device, as defined in § 63.681 of this subpart, is required to avoid an unsafe condition.

(i) The owner or operator who elects to control air emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (i)(1) through (i)(4) of this section.

(1) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(2) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in § 63.693 of this subpart.

§ 63.686 Standards: Oil-water and organic-water separators.

(a) The provisions of this section apply to the control of air emissions from oil-water separators and organic-water separators for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from the separator subject to this section by installing and operating one of the following:

(1) A floating roof in accordance with all applicable provisions specified in 40 CFR 63 subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators. For portions of the separator where it is infeasible to install and operate a floating roof, such as over a weir mechanism,

the owner or operator shall comply with the requirements specified in paragraph (b)(2) of this section.

(2) A fixed-roof that is vented through a closed-vent system to a control device in accordance with all applicable provisions specified in 40 CFR 63 subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators.

§ 63.687 Standards: Surface impoundments.

(a) The provisions of this section apply to the control of air emissions from surface impoundments for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from each surface impoundment subject to this section by installing and operating one of the following, as relevant to the surface impoundment design and operation:

(1) A floating membrane cover in accordance with the applicable provisions specified in 40 CFR 63 subpart QQ—National Emission Standards for Surface Impoundments; or

(2) A cover that is vented through a closed-vent system to a control device in accordance with all applicable provisions specified in 40 CFR 63 subpart QQ—National Emission Standards for Surface Impoundments.

§ 63.688 Standards: Containers.

(a) The provisions of this section apply to the control of air emissions from containers for which § 63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in paragraph (c) of this section apply to the container.

(1) For a container having a design capacity greater than 0.1 m³ and less than or equal to 0.46 m³, the owner or operator shall control air emissions from the container in accordance with the standards for Container Level 1

controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

(2) For a container having a design capacity greater than 0.46 m³ and the container is not in light-material service as defined in §63.681 of this subpart, the owner or operator shall control air emissions from the container in accordance with the standards for Container Level 1 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

(3) For a container having a design capacity greater than 0.46 m³ and the container is in light-material service as defined in §63.681 of this subpart, the owner or operator shall control air emissions from the container in accordance with the standards for Container Level 2 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

(c) When a container subject to this subpart and having a design capacity greater than 0.1 m³ is used for treatment of an off-site material by a waste stabilization process as defined in §63.681 of this subpart, the owner or operator shall control air emissions from the container at those times during the process when the off-site material in container is exposed to the atmosphere in accordance with the standards for Container Level 3 controls as specified in 40 CFR 63 subpart PP—National Emission Standards for Containers.

§63.689 Standards: Transfer systems.

(a) The provisions of this section apply to the control of air emissions from transfer systems for which §63.683(b)(1)(i) of this subpart references the use of this section for such air emission control.

(b) For each transfer system that is subject to this section and is an individual drain system, the owner or operator shall control air emissions from in accordance with the standards specified in 40 CFR 63 subpart RR—National Emission Standards for Individual Drain Systems.

(c) For each transfer system that is subject to this section but is not an individual drain system, the owner or operator shall control air emissions by installing and operating one of the following:

(1) A transfer system that uses covers in accordance with the requirements specified in paragraph (d) of this section.

(2) A transfer system that consists of continuous hard-piping. All joints or seams between the pipe sections shall be permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed flange).

(3) A transfer system that is enclosed and vented through a closed vent system to a control device in accordance with the following requirements:

(i) The transfer system is designed and operated such that an internal pressure in the vapor headspace in the system is maintained at a level less than atmospheric pressure when the control device is operating, and

(ii) The closed vent system and control device are designed and operated in accordance with the requirements of §63.693 of this subpart.

(d) Owners and operators controlling air emissions from a transfer system using covers in accordance with the provisions of paragraph (c)(1) of this section shall meet the following requirements:

(1) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the off-site material as it is conveyed by the transfer system except for the openings at the inlet and outlet to the transfer system through which the off-site material passes. The inlet and outlet openings used for passage of the off-site material through the transfer system shall be the minimum size required for practical operation of the transfer system.

(2) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section joints or between the interface of the cover edge and its mounting.

(3) Except for the inlet and outlet openings to the transfer system through which the off-site material passes, each opening in the cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the

closure device or between the perimeter of the opening and the closure device.

(4) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the off-site material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability; the effects of any contact with the material or its vapors conveyed in the transfer system; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the transfer system on which the cover is installed.

(5) Whenever an off-site material is in the transfer system, the cover shall be installed with each closure device secured in the closed position except as follows:

(i) Opening of closure devices or removal of the cover is allowed to provide access to the transfer system for performing routine inspection, maintenance, repair, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a hatch or remove the cover to repair conveyance equipment mounted under the cover or to clear a blockage of material inside the system. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable.

(ii) Opening of a safety device, as defined in § 63.681 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(6) The owner or operator shall inspect the air emission control equipment in accordance with the requirements specified in § 63.695 of this subpart.

§ 63.690 Standards: Process vents.

(a) The provisions of this section apply to the control of air emissions from process vents for which § 63.683(b)(2)(i) of this subpart ref-

erences the use of this section for such air emission control.

(b) The owner or operator shall control HAP emitted from the process vent within the affected source by connecting each process vent through a closed-vent system to a control device that is designed and operated in accordance with the standards specified in § 63.693 of this subpart with the following exceptions.

(1) Each individual control device used to comply with the requirements of this section is not required to meet the level of performance, as applicable to the particular control technology used, specified in §§ 63.693 (d)(1), (e)(1), (f)(1)(i), and (g)(1)(i) of this subpart provided that these control devices are designed and operated to achieve a total reduction of 95 weight percent or more in the quantity of HAP, listed in Table 1 of this subpart, that is emitted from all process vents within the affected source.

(2) For the purpose of complying with this section, a device for which the predominate function is the recovery or capture of solvents or other organics for use, reuse, or sale (e.g., a primary condenser or a solvent recovery unit) is not a control device.

§ 63.691 Standards: Equipment leaks.

(a) The provisions of this section apply to the control of air emissions from equipment leaks for which § 63.683(b)(3) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control the HAP emitted from equipment leaks in accordance with the applicable provisions of either:

(1) Section 61.242 through § 61.247 in 40 CFR Part 61 subpart V—National Emission Standards for Equipment Leaks; or

(2) Section 63.162 through § 63.182 in 40 CFR Part 63 subpart H—National Emission Standards for Organic Hazardous Air Pollutants from Equipment Leaks.

§ 63.692 [Reserved]**§ 63.693 Standards: Closed-vent systems and control devices.**

(a) The provisions of this section apply to closed-vent systems and control devices used to control air emissions for which another standard references the use of this section for such air emission control.

(b) For each closed-vent system and control device used to comply with this section, the owner or operator shall meet the following requirements:

(1) The closed-vent system shall be designed and operated in accordance with the requirements specified in paragraph (c) of this section.

(2) The control device shall remove, recover, or destroy HAP at a level of performance that achieves the requirements applicable to the particular control device technology as specified in paragraphs (d) through (h) of this section. The owner or operator shall demonstrate that the control device achieves the applicable performance requirements by either conducting a performance test or preparing a design analysis for the control device in accordance with the requirements specified in this section.

(3) Whenever gases or vapors containing HAP are vented through a closed-vent system connected to a control device used to comply with this section, the control device shall be operating except at the following times:

(i) The control device may be bypassed for the purpose of performing planned routine maintenance of the closed vent system or control device in situations when the routine maintenance cannot be performed during periods that the emission point vented to the control device is shutdown. On an annual basis, the total time that the closed-vent system or control device is bypassed to perform routine maintenance shall not exceed 240 hours per each 12 month period.

(ii) The control device may be bypassed for the purpose of correcting a malfunction of the closed vent system or control device. The owner or operator shall perform the adjustments or repairs necessary to correct the malfunction as soon as practicable after the malfunction is detected.

(4) The owner or operator shall ensure that the control device is achieving the performance requirements specified in paragraph (b)(2) of this section by continuously monitoring the operation of the control device as follows:

(i) A continuous monitoring system shall be installed and operated for each control device that measures operating parameters appropriate for the control device technology as specified in paragraphs (d) through (h) of this section. This system shall include a continuous recorder that records the measured values of the selected operating parameters. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The continuous recorder shall be a data recording device that records either an instantaneous data value at least once every 15 minutes or an average value for intervals of 15-minutes or less.

(ii) For each monitored operating parameter, the owner or operator shall establish a minimum operating parameter value or a maximum operating parameter value, as appropriate, to define the range of conditions at which the control device must be operated to continuously achieve the applicable performance requirements of this section. Each minimum or maximum operating parameter value shall be established as follows:

(A) If the owner or operator conducts a performance test to demonstrate control device performance, then the minimum or maximum operating parameter value shall be established based on values measured during the performance test and supplemented, as necessary, by control device design analysis and manufacturer recommendations.

(B) If the owner or operator uses a control device design analysis to demonstrate control device performance, then the minimum or maximum operating parameter value shall be established based on the control device design analysis and the control device manufacturer's recommendations.

(C) When the control device is required to be operating in accordance with the provisions of paragraph (b)(3) of this section, the owner or operator

shall inspect the data recorded by the continuous monitoring system on a routine basis and operate the control device such that the actual value of each monitored operating parameter is greater than the minimum operating parameter value or less than the maximum operating parameter value, as appropriate, established for the control device.

(5) The owner or operator shall inspect and monitor the closed-vent system in accordance with the requirements of § 63.695(c) of this subpart.

(6) The owner or operator shall maintain records for each closed-vent system and control device in accordance with the requirements of § 63.696 of this subpart.

(7) The owner or operator shall prepare and submit reports for each closed-vent system and control device in accordance with the requirements of § 63.697 of this subpart.

(8) The Administrator may at any time conduct or request that the owner or operator conduct a performance test to demonstrate that a closed-vent system and control device achieves the applicable performance requirements of this section. The performance test shall be conducted in accordance with the requirements of § 63.694(l) of this subpart. The Administrator may elect to have an authorized representative observe a performance test conducted by the owner or operator. Should the results of this performance test not agree with the determination of control device performance based on a design analysis, then the results of the performance test shall be used to establish compliance with this section.

(c) *Closed-vent system requirements.* (1) The vent stream required to be controlled shall be conveyed to the control device by either of the following closed-vent systems:

(i) A closed-vent system that is designed to operate with no detectable organic emissions using the procedure specified in § 63.694(k) of this subpart; or

(ii) A closed-vent system that is designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gage or other pressure measurement device that can be read from a readily

accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

(2) In situations when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in paragraph (c)(2)(i) or a seal or locking device as specified in paragraph (c)(2)(ii) of this section. For the purpose of complying with this paragraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(i) If a flow indicator is used to comply with paragraph (c)(2) of this section, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this paragraph, a flow indicator means a device which indicates either the presence of gas or vapor flow in the bypass line.

(ii) If a seal or locking device is used to comply with paragraph (c)(2) of this section, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(d) *Carbon adsorption control device requirements.* (1) The carbon adsorption system shall be designed and operated to achieve one of the following performance specifications:

(i) Recover 95 percent or more, on a weight-basis, of the total organic compounds (TOC), less methane and ethane, contained in the vent stream entering the carbon adsorption system; or

(ii) Recover 95 percent or more, on a weight-basis, of the total HAP listed in Table 1 of this subpart contained in the vent stream entering the carbon adsorption system.

(2) The owner or operator shall demonstrate that the carbon adsorption system achieves the performance requirements of paragraph (d)(1) of this section by one of the following methods:

(i) Conduct a performance test in accordance with the requirements of § 63.694(l) of this subpart.

(ii) Prepare a design analysis. This analysis shall address the vent stream characteristics and control device operating parameters for the applicable carbon adsorption system type as follows:

(A) For a regenerable carbon adsorption system, the design analysis shall address the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration steam flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of the carbon.

(B) For a nonregenerable carbon adsorption system (e.g., a carbon canister), the design analysis shall address the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration, carbon bed capacity, activated carbon type and working capacity, and design carbon replacement interval based on the total carbon working capacity of the control device and emission point operating schedule.

(3) To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use one of the following continuous monitoring systems:

(i) For a regenerative-type carbon adsorption system, an integrating regeneration stream flow monitoring device

equipped with a continuous recorder and a carbon bed temperature monitoring device for each adsorber vessel equipped with a continuous recorder. The integrating regeneration stream flow monitoring device shall have an accuracy of ± 10 percent and measure the total regeneration stream mass flow during the carbon bed regeneration cycle. The temperature monitoring device shall measure the carbon bed temperature after regeneration and within 15 minutes of completing the cooling cycle and the duration of the carbon bed steaming cycle.

(ii) A continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iii) A continuous monitoring system that measures other alternative operating parameters upon approval of the Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(4) The owner or operator shall manage the carbon used for the carbon adsorption system, as follows:

(i) Following the initial startup of the control device, all carbon in the control device shall be replaced with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established for the carbon adsorption system.

(ii) The spent carbon removed from the carbon adsorption system shall be managed in one of the following ways:

(A) Regenerated or reactivated in a thermal treatment unit that is designed and operated in accordance with the requirements of 40 CFR 264 subpart X and is permitted under 40 CFR part 270 of this chapter, or certified to be in compliance with the interim status requirements of 40 CFR 265 subpart P of this chapter.

(B) Burned in a hazardous waste incinerator that is designed and operated in accordance with the requirements of 40 CFR 264 subpart O and is permitted under 40 CFR part 270 of this chapter, or certified to be in compliance with the interim status requirements of 40 CFR part 265 subpart O.

(C) Burned in a boiler or industrial furnace that is designed and operated in accordance with the requirements of

40 CFR 266 subpart H and is permitted under 40 CFR part 270 of this chapter, or certified to be in compliance with the interim status requirements of 40 CFR part 266 subpart H of this chapter.

(e) *Condenser control device requirements.* (1) The condenser shall be designed and operated to achieve one of the following performance specifications:

(i) Recover 95 percent or more, on a weight-basis, of the total organic compounds (TOC), less methane and ethane, contained in the vent stream entering the condenser; or

(ii) Recover 95 percent or more, on a weight-basis, of the total HAP, listed in Table 1 of this subpart, contained in the vent stream entering the condenser.

(2) The owner or operator shall demonstrate that the condenser achieves the performance requirements of paragraph (e)(1) of this section by one of the following methods:

(i) Conduct performance tests in accordance with the requirements of § 63.694(l) of this subpart.

(ii) Prepare a design analysis. This design analysis shall address the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(3) To meet the continuous monitoring requirements of paragraph (b)(3)(ii) of this section, the owner or operator shall use one of the following continuous monitoring systems:

(i) A temperature monitoring device equipped with a continuous recorder. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser.

(ii) A continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iii) A continuous monitoring system that measures other alternative operating parameters upon approval of the

Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(f) Vapor incinerator control device requirements.

(1) The vapor incinerator shall be designed and operated to achieve one of the following performance specifications:

(i) Destroy the total organic compounds (TOC), less methane and ethane, contained in the vent stream entering the vapor incinerator either:

(A) By 95 percent or more, on a weight-basis, or

(B) To achieve a total incinerator outlet concentration for the TOC, less methane and ethane, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(ii) Destroy the HAP listed in Table 1 of this subpart contained in the vent stream entering the vapor incinerator either:

(A) By 95 percent or more, on a total HAP weight-basis, or

(B) To achieve a total incinerator outlet concentration for the HAP, listed in table 1 of this subpart, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(iii) Maintain the conditions in the vapor incinerator combustion chamber at a residence time of 0.5 seconds or longer and at a temperature of 760°C or higher.

(2) The owner or operator shall demonstrate that the vapor incinerator achieves the performance requirements of paragraph (f)(1) of this section by one of the following methods:

(i) Conduct performance tests in accordance with the requirements of § 63.694(l) of this subpart; or

(ii) Prepare a design analysis. The design analysis shall include analysis of the vent stream characteristics and control device operating parameters for the applicable vapor incinerator type as follows:

(A) For a thermal vapor incinerator, the design analysis shall address the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures in the combustion chamber and the combustion chamber residence time.

(B) For a catalytic vapor incinerator, the design analysis shall address the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet, and the design service life of the catalyst.

(3) To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use one of the following continuous monitoring systems, as applicable:

(i) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.

(ii) For a catalytic vapor incinerator, a temperature monitoring device capable of monitoring temperature at two locations equipped with a continuous recorder. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(iii) For either type of vapor incinerator, a continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iv) For either type of vapor incinerator, a continuous monitoring system that measures alternative operating parameters other than those specified in paragraphs (f)(3)(i) or (f)(3)(ii) of this section upon approval of the Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(g) Boilers and process heaters control device requirements.

(1) The boiler or process heater shall be designed and operated to achieve one of the following performance specifications:

(i) Destroy the total organic compounds (TOC), less methane and ethane, contained in the vent stream introduced into the flame zone of the boiler or process heater either:

(A) By 95 percent or more, on a weight-basis, or

(B) To achieve in the exhausted combustion gases a total concentration for the TOC, less methane and ethane, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(ii) Destroy the HAP listed in Table 1 of this subpart contained in the vent stream entering the vapor incinerator either:

(A) By 95 percent or more, on a total HAP weight-basis, or

(B) To achieve in the exhausted combustion gases a total concentration for the HAP, listed in table 1 of the subpart, of less than or equal to 20 parts per million by volume (ppmv) on a dry basis corrected to 3 percent oxygen.

(iii) Introduce the vent stream into the flame zone of the boiler or process heater and maintain the conditions in the combustion chamber at a residence time of 0.5 seconds or longer and at a temperature of 760°C or higher.

(iv) Introduce the vent stream with the fuel that provides the predominate heat input to the boiler or process heater (i.e., the primary fuel); or

(v) Introduce the vent stream to a boiler or process heater for which the owner or operator either has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266 subpart H of this chapter; or has certified compliance with the interim status requirements of 40 CFR part 266 subpart H of this chapter.

(2) The owner or operator shall demonstrate that the boiler or process heater achieves the performance requirements of paragraph (g)(1)(i), (g)(1)(ii), or (g)(1)(iii) of this section using one of the following methods:

(i) Conduct performance tests in accordance with the requirements of § 63.694(l) of this subpart.

(ii) Prepare a design analysis. The design analysis shall address the vent stream composition, constituent concentrations, and flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall describe the method and location where the vent stream is introduced into the flame zone.

(3) The owner or operator shall demonstrate that the boiler or process

heater achieves the performance requirements of paragraph (g)(1)(iv) or (g)(1)(v) of this section by keeping records that document that the boiler or process heater is designed and operated in accordance with the applicable requirements of this section.

(4) To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use any of the following continuous monitoring systems:

(i) A temperature monitoring device equipped with a continuous recorder. The temperature sensor shall be installed at a location in the combustion chamber downstream of the flame zone.

(ii) A continuous monitoring system that measures the concentration level of organic compounds in the exhaust vent stream from the control device using an organic monitoring device equipped with a continuous recorder.

(iii) A continuous monitoring system that measures alternative operating parameters other than those specified in paragraphs (g)(3)(i) or (g)(3)(ii) of this section upon approval of the Administrator as specified in 40 CFR 63.8 (f)(1) through (f)(5) of this part.

(h) Flare control device requirements. The flare shall be designed and operated in accordance with the requirements of 40 CFR 63.11(b). To meet the monitoring requirements of paragraph (b)(4) of this section, the owner or operator shall use a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

§ 63.694 Testing methods and procedures.

(a) This section specifies the testing methods and procedures required for this subpart to perform the following:

(1) To determine the average VOHAP concentration for off-site material streams at the point-of-delivery for compliance with standards specified § 63.683 of this subpart, the testing methods and procedures are specified in paragraph (b) of this section.

(2) To determine the average VOHAP concentration for treated off-site material streams at the point-of-treatment for compliance with standards specified § 63.684 of this subpart, the testing

methods and procedures are specified in paragraph (c) of this section.

(3) To determine the treatment process VOHAP concentration limit (C_R) for compliance with standards specified § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (d) of this section.

(4) To determine treatment process required HAP removal rate (RMR) for compliance with standards specified § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (e) of this section.

(5) To determine treatment process actual HAP removal rate (MR) for compliance with standards specified § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (f) of this section.

(6) To determine treatment process required HAP reduction efficiency (R) for compliance with standards specified in § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (g) of this section.

(7) To determine treatment process required HAP biodegradation efficiency (R_{bio}) for compliance with standards specified in § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (h) of this section.

(8) To determine treatment process required actual HAP mass removal rate (MR_{bio}) for compliance with standards specified in § 63.684 of this subpart, the testing methods and procedures are specified in paragraph (i) of this section.

(9) To determine maximum organic HAP vapor pressure of off-site materials in tanks for compliance with the standards specified in § 63.685 of this subpart, the testing methods and procedures are specified in paragraph (j) of this section.

(10) To determine no detectable organic emissions, the testing methods and procedures are specified in paragraph (k) of this section.

(11) To determine closed-vent system and control device performance for compliance with the standards specified in § 63.693 of this subpart, the testing methods and procedures are specified in paragraph (l) of this section.

(b) Testing methods and procedures to determine average VOHAP concentration of an off-site material stream at the point-of-delivery.

(1) The average VOHAP concentration of an off-site material at the point-of-delivery shall be determined using either direct measurement as specified in paragraph (b)(2) of this section or by knowledge as specified in paragraph (b)(3) of this section.

(2) *Direct measurement to determine VOHAP concentration*—(i) *Sampling*. Samples of the off-site material stream shall be collected from the container, pipeline, or other device used to deliver the off-site material stream to the plant site in a manner such that volatilization of organics contained in the sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(A) The averaging period to be used for determining the average VOHAP concentration for the off-site material stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the off-site material stream but shall not exceed 1 year.

(B) A sufficient number of samples, but no less than four samples, shall be collected to represent the complete range of HAP compositions and HAP quantities that occur in the off-site material stream during the entire averaging period due to normal variations in the operating conditions for the source or process generating the off-site material stream. Examples of such normal variations are seasonal variations in off-site material quantity or fluctuations in ambient temperature.

(C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the off-site material stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the

plant site operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 or Method 25D in 40 CFR part 60, appendix A.

(ii) *Analysis*. Each collected sample shall be prepared and analyzed in accordance with one of the following methods:

(A) Method 25D in 40 CFR part 60, appendix A.

(B) Method 305 in 40 CFR part 63, appendix A.

(C) Method 624 in 40 CFR part 136, appendix A.

(D) Method 1624 in 40 CFR part 136, appendix A.

(E) Method 1625 in 40 CFR part 136, appendix A.

(F) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 and Section 5.3 of Method 301 in 40 CFR part 63, appendix A.

(iii) *Calculations*. The average VOHAP concentration (C) on a mass-weighted basis shall be calculated by using the results for all samples analyzed in accordance with paragraph (b)(2)(ii) of this section and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

where:

\bar{C} =Average VOHAP concentration of the off-site material at the point-of-delivery on a mass-weighted basis, ppmw.

i=Individual sample "i" of the off-site material.

n=Total number of samples of the off-site material collected (at least 4) for the averaging period (not to exceed 1 year).

Q_i =Mass quantity of off-site material stream represented by C_i , kg/hr.

Q_T =Total mass quantity of off-site material during the averaging period, kg/hr.

C_i =Measured VOHAP concentration of sample "i" as determined in accordance with the requirements of § 63.693(b)(2)(ii), ppmw.

(3) Knowledge of the off-site material to determine VOHAP concentration.

(i) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the off-site material stream's average VOHAP concentration. Examples of information that may be used as the basis for knowledge include: material balances for the source or process generating the off-site material stream; species-specific chemical test data for the off-site material stream from previous testing that are still applicable to the current off-site material stream; previous test data for other locations managing the same type of off-site material stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.

(ii) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VOHAP concentration. For example, an owner or operator may use HAP concentration test data for the off-site material stream that are validated in accordance with Method 301 in 40 CFR part 63, appendix A of this part as the basis for knowledge of the off-site material.

(iii) An owner or operator using species-specific chemical concentration test data as the basis for knowledge of the off-site material may adjust the test data to the corresponding average VOHAP concentration value which would be obtained had the off-site material samples been analyzed using Method 305. To adjust these data, the measured concentration for each individual HAP chemical species contained in the off-site material is multiplied by the appropriate species-specific adjustment factor (f_{m305}) listed in Table 1 of this subpart.

(iv) In the event that the Administrator and the owner or operator disagree on a determination of the average VOHAP concentration for an off-

site material stream using knowledge, then the results from a determination of VOHAP concentration using direct measurement as specified in paragraph (b)(2) of this section shall be used to establish compliance with the applicable requirements of this subpart. The Administrator may perform or request that the owner or operator perform this determination using direct measurement.

(c) *Determination of average VOHAP concentration of an off-site material stream at the point-of-treatment*—(1) *Sampling*. Samples of the off-site material stream shall be collected at the point-of-treatment in a manner such that volatilization of organics contained in the sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(i) The averaging period to be used for determining the average VOHAP concentration for the off-site material stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the off-site material stream but shall not exceed 1 year.

(ii) A sufficient number of samples, but no less than four samples, shall be collected to represent the complete range of HAP compositions and HAP quantities that occur in the off-site material stream during the entire averaging period due to normal variations in the operating conditions for the treatment process. Examples of such normal variations are seasonal variations in off-site material quantity or fluctuations in ambient temperature.

(iii) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the off-site material stream such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the plant site operating records. An example of an acceptable sampling plan includes a plan

incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 or Method 25D in 40 CFR part 60, appendix A.

(2) *Analysis.* Each collected sample shall be prepared and analyzed in accordance with the one of the following methods:

(i) Method 25D in 40 CFR part 60, appendix A.

(ii) Method 305 in 40 CFR part 63, appendix A.

(iii) Method 624 in 40 CFR part 136, appendix A.

(iv) Method 1624 in 40 CFR part 136, appendix A.

(v) Method 1625 in 40 CFR part 136, appendix A.

(3) *Calculations.* The average VOHAP concentration (\bar{C}) on a mass-weighted basis shall be calculated by using the results for all samples analyzed in accordance with paragraph (c)(2) of this section and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

\bar{C} =Average VOHAP concentration of the off-site material on a mass-weighted basis, ppmw.

i =Individual sample "i" of the off-site material.

n =Total number of samples of the off-site material collected (at least 4) for the averaging period (not to exceed 1 year).

Q_i =Mass quantity of off-site material stream represented by C_i , kg/hr.

Q_T =Total mass quantity of off-site material during the averaging period, kg/hr.

C_i =Measured VOHAP concentration of sample "i" as determined in accordance with the requirements of § 63.693(c)(2), ppmw.

(d) *Determination of treatment process VOHAP concentration limit (C_R).* (1) All of the off-site material streams entering the treatment process shall be identified.

(2) The average VOHAP concentration of each off-site material stream at the point-of-delivery shall be determined using the procedures specified in paragraph (b) of this section.

(3) The VOHAP concentration limit (C_R) shall be calculated by using the results determined for each individual off-site material stream and the following equation:

$$C_R = \frac{\sum_{x=1}^m (Q_x \times \bar{C}_x) + \sum_{y=1}^n (Q_y \times 500 \text{ ppmw})}{\sum_{x=1}^m Q_x + \sum_{y=1}^n Q_y}$$

where:

C_R =VOHAP concentration limit, ppmw.

x =Individual off-site material stream "x" that has a VOHAP concentration less than 500 ppmw at the point-of-delivery.

y =Individual off-site material stream "y" that has a VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery.

m =Total number of "x" off-site material streams treated by process.

n =Total number of "y" off-site material streams treated by process.

Q_x =Total mass quantity of off-site material stream "x", kg/yr.

Q_y =Total mass quantity of off-site material stream "y", kg/yr.

\bar{C}_x =VOHAP concentration of off-site material stream "x" at the point-of-delivery, ppmw.

(e) *Determination of required HAP mass removal rate (RMR).* (1) All of the off-site material streams entering the treatment process shall be identified.

(2) The average VOHAP concentration of each off-site material stream at

the point-of-delivery shall be determined in accordance with the requirements of paragraph (b) of this section.

(3) For each individual off-site material stream that has an average VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery, the average volumetric flow rate and the density of the off-site material stream at the point-of-delivery shall be determined.

(4) The required HAP mass removal rate (RMR) shall be calculated by using the average VOHAP concentration, average volumetric flow rate, and density determined for each off-site material stream and the following equation:

$$\text{RMR} = \sum_{y=1}^n \left[V_y \times k_y \times \frac{(\bar{C}_y - 500 \text{ ppmw})}{10^6} \right]$$

where:

RMR=Required HAP mass removal rate, kg/hr.

y=Individual off-site material stream "y" that has a VOHAP concentration equal to or greater than 500 ppmw at the point-of-delivery as determined in accordance with the requirements of § 63.693(b).

n=Total number of "y" off-site material streams treated by process.

V_y =Average volumetric flow rate of off-site material stream "y" at the point-of-delivery, m³/hr.

k_y =Density of off-site material stream "y", kg/m³

\bar{C}_y =Average VOHAP concentration of off-site material stream "y" at the point-of-delivery as determined in accordance with the requirements of § 63.693(b), ppmw.

(f) *Determination of actual HAP mass removal rate (MR).* (1) The actual HAP mass removal rate (MR) shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(2) The off-site material HAP mass flow entering the process (E_b) and the off-site material HAP mass flow exiting the process (E_a) shall be determined in accordance with the requirements of paragraph (g)(4) of this section.

(3) The actual mass removal rate shall be calculated by using the mass flow rates determined in accordance

with the requirements of paragraph (f)(2) of this section and the following equation:

$$\text{MR} = E_b - E_a$$

where:

MR=Actual HAP mass removal rate, kg/hr.

E_b =Off-site material HAP mass flow entering process as determined in accordance with the requirements of paragraph (f)(2) of this section, kg/hr.

E_a =Off-site material HAP mass flow exiting process as determined in accordance with the requirements of paragraph (f)(2) of this section, kg/hr.

(g) *Determination of treatment process HAP reduction efficiency (R).* (1) The HAP reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

(2) All off-site material streams entering the treatment process and all off-site material streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the off-site material in the process.

(3) For each run, information shall be determined for each off-site material stream identified in paragraph (g)(2) of this section using the following procedures:

(i) The mass quantity of each off-site material stream entering the process (Q_b) and the mass quantity of each off-site material stream exiting the process (Q_a) shall be determined.

(ii) The average VOHAP concentration at the point-of-delivery of each off-site material stream entering the process (\bar{C}_b) during the run shall be determined in accordance with the requirements of paragraph (b) of this section. The VOHAP concentration of the off-site material stream at the point-of-treatment (C_a) during the run shall be determined in accordance with the applicable requirements of paragraph (c) of this section.

(4) The off-site material HAP mass flow entering the process (E_b) and the off-site material HAP mass flow

exiting the process (E_a) shall be calculated by using the results determined in accordance with paragraph (g)(3) of this section and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^m (Q_{bj} \times \bar{C}_{bj})$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^m (Q_{aj} \times \bar{C}_{aj})$$

where:

E_b =Off-site material HAP mass flow entering process, kg/hr.

E_a =Off-site material HAP mass flow exiting process, kg/hr.

m =Total number of runs (at least 3)

j =Individual run "j"

Q_v =Mass quantity of off-site material entering process during run "j", kg/hr.

Q_{aj} =Average mass quantity of off-site material exiting process during run "j", kg/hr.

\bar{C}_{aj} =Average VOHAP concentration of off-site material exiting process during run "j" as determined in accordance with the requirements of § 63.693(b), ppmw.

\bar{C}_v =Average VOHAP concentration of off-site material entering process during run "j" as determined in accordance with the requirements of § 63.693(b), ppmw.

(5) The HAP reduction efficiency (R) shall be calculated by using the results determined in accordance with paragraph (g)(4) of this section and the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

where:

R =HAP reduction efficiency, percent.

E_b =Off-site material HAP mass flow entering process as determined in accordance with the requirements of paragraph (d)(4) of this section, kg/hr.

E_a =Off-site material HAP mass flow exiting process as determined in accordance with the requirements of

paragraph (d)(4) of this section, kg/hr.

(h) *Determination of HAP biodegradation efficiency* (R_{bio}). (1) The fraction of HAP biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this part.

(2) The HAP biodegradation efficiency (R_{bio}) shall be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100$$

where:

R_{bio} = HAP biodegradation efficiency, percent.

F_{bio} = Fraction of HAP biodegraded as determined in accordance with the requirements of paragraph (h)(1) of this section.

(i) *Determination of actual HAP mass removal rate* (MR_{bio}). (1) The actual HAP mass removal rate (MR_{bio}) shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(2) The off-site material HAP mass flow entering the process (E_b) shall be determined in accordance with the requirements of paragraph (g)(4) of this section.

(3) The fraction of HAP biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this part.

(4) The actual mass removal rate shall be calculated by using the HAP mass flow rates and fraction of HAP biodegraded determined in accordance with the requirements of paragraphs (i)(2) and (i)(3), respectively, of this section and the following equation:

$$MR_{bio} = E_b \times F_{bio}$$

where:

MR_{bio} =Actual HAP mass removal rate, kg/hr.

E_b =Off-site material HAP mass flow entering process, kg/hr.

F_{bio} =Fraction of HAP biodegraded.

(j) *Determination of maximum HAP vapor pressure for off-site material in a tank*. (1) The maximum HAP vapor pressure of the off-site material composition managed in a tank shall be determined using either direct measurement as specified in paragraph (j)(2) of this section or by knowledge of the off-site material as specified by paragraph (j)(3) of this section.

(2) Direct measurement to determine the maximum HAP vapor pressure of an off-site material.

(i) Sampling. A sufficient number of samples shall be collected to be representative of the off-site material contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the off-site material is collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the plant site operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 or Method 25D in 40 CFR part 60, appendix A.

(ii) Analysis. Any one of the following methods may be used to analyze the samples and compute the maximum HAP vapor pressure of the off-site material:

(A) Method 25E in 40 CFR part 60 appendix A;

(B) Methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from External Floating Roof Tanks,";

(C) Methods obtained from standard reference texts;

(D) ASTM Method 2879-83; or

(E) Any other method approved by the Administrator.

(3) Use of knowledge to determine the maximum HAP vapor pressure of the off-site material. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum HAP vapor pressure of the off-site material is less than the maximum vapor pressure limit listed in Table 3 or Table 4 of this subpart for the applicable tank design capacity category. Examples of information that may be used include: the off-site material is generated by a process for

which at other locations it previously has been determined by direct measurement that the off-site material maximum HAP vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

(k) *Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.* (1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the unit contains a material having an organic HAP concentration representative of the range of concentrations for the off-site materials expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the off-site material placed in the unit, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(l) Control device performance test procedures.

(1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites at the inlet and outlet of the control device.

(i) To determine compliance with a control device percent reduction requirement, sampling sites shall be located at the inlet of the control device as specified in paragraphs (l)(1)(i)(A) and (l)(1)(i)(B) of this section, and at the outlet of the control device.

(A) The control device inlet sampling site shall be located after the final product recovery device.

(B) If a vent stream is introduced with the combustion air or as a auxiliary fuel into a boiler or process heater, the location of the inlet sampling sites shall be selected to ensure that the measurement of total HAP concentration or TOC concentration, as applicable, includes all vent streams and primary and secondary fuels introduced into the boiler or process heater.

(ii) To determine compliance with an enclosed combustion device concentration limit, the sampling site shall be located at the outlet of the device.

(2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) To determine compliance with the control device percent reduction requirement, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A of this chapter; alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 in 40 CFR part 63, appendix A of this part may be used. The following procedures shall be used to calculate percent reduction efficiency:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time such as 15 minute intervals during the run.

(ii) The mass rate of either TOC (minus methane and ethane) or total HAP (E_i and E_o , respectively) shall be computed.

(A) The following equations shall be used:

$$E_i = K_2 \left(\sum_{j=1}^{n} 150n C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^{n} 150n C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij} , C_{oj} = Concentration of sample component j of the gas stream at the inlet

and outlet of the control device, respectively, dry basis, parts per million by volume.

E_i , E_o =Mass rate of TOC (minus methane and ethane) or total HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

M_{ij} , M_{oj} =Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o =Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

K_2 =Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20°C.

(B) When the TOC mass rate is calculated, all organic compounds (minus methane and ethane) measured by Method 18 of 40 CFR part 60, appendix A shall be summed using the equation in paragraph (l)(3)(ii)(A) of this section.

(C) When the total HAP mass rate is calculated, only the HAP constituents shall be summed using the equation in paragraph (l)(3)(ii)(A) of this section.

(iii) The percent reduction in TOC (minus methane and ethane) or total HAP shall be calculated as follows:

$$R_{cd} = \frac{E_i - E_o}{E_i} \times 100$$

where:

R_{cd} =Control efficiency of control device, percent.

E_i =Mass rate of TOC (minus methane and ethane) or total HAP at the inlet to the control device as calculated under paragraph (l)(3)(ii) of this section, kilograms TOC per hour or kilograms HAP per hour.

E_o =Mass rate of TOC (minus methane and ethane) or total HAP at the outlet of the control device, as calculated under paragraph (l)(3)(ii) of this section, kilograms TOC per hour or kilograms HAP per hour.

(iv) If the vent stream entering a boiler or process heater is introduced with the combustion air or as a secondary fuel, the weight-percent reduction

of total HAP or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total HAP in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total HAP exiting the device, respectively.

(4) To determine compliance with the enclosed combustion device total HAP concentration limit of this subpart, the owner or operator shall use Method 18 of 40 CFR part 60, appendix A to measure either TOC (minus methane and ethane) or total HAP. Alternatively, any other method or data that has been validated according to Method 301 in appendix A of this part, may be used. The following procedures shall be used to calculate parts per million by volume concentration, corrected to 3 percent oxygen:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(ii) The TOC concentration or total HAP concentration shall be calculated according to paragraph (m)(4)(ii)(A) or (m)(4)(ii)(B) of this section.

(A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{i=1}^x \frac{\sum_{j=1}^n C_{ij}}{x}$$

where:

C_{TOC} =Concentration of total organic compounds minus methane and ethane, dry basis, parts per million by volume.

C_{ji} =Concentration of sample components j of sample i , dry basis, parts per million by volume.

n =Number of components in the sample.

x =Number of samples in the sample run.

(B) The total HAP concentration (C_{HAP}) shall be computed according to the equation in paragraph (l)(4)(ii)(A) of this section except that only HAP constituents shall be summed.

(iii) The measured TOC concentration or total HAP concentration shall be corrected to 3 percent oxygen as follows:

(A) The emission rate correction factor or excess air, integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration ($\%O_{2\text{dry}}$). The samples shall be collected during the same time that the samples are collected for determining TOC concentration or total HAP concentration.

(B) The concentration corrected to 3 percent oxygen (C_c) shall be computed using the following equation:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2\text{dry}}} \right)$$

where:

C_c =TOC concentration or total HAP concentration corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m =Measured TOC concentration or total HAP concentration, dry basis, parts per million by volume.

$\%O_{2\text{dry}}$ =Concentration of oxygen, dry basis, percent by volume.

§ 63.695 Inspection and monitoring requirements.

(a) This section specifies the inspection and monitoring procedures required to perform the following:

(1) To inspect tank fixed-roofs and floating roofs for compliance with the Tank level 2 controls standards specified in § 63.685 of this subpart, the inspection procedures are specified in paragraph (b) of this section.

(2) To inspect and monitor closed-vent systems for compliance with the standards specified in § 63.693 of this subpart, the inspection and monitoring procedure are specified in paragraph (c) of this section.

(3) To inspect and monitor transfer system covers for compliance with the standards specified in § 63.689(c)(1) of this subpart, the inspection and mon-

itoring procedure are specified in paragraph (d) of this section.

(b) *Tank Level 2 fixed roof and floating roof inspection requirements.* (1) Owners and operators that use a tank equipped with an internal floating roof in accordance with the provisions of § 63.685(e) of this subpart shall meet the following inspection requirements:

(i) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, the internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the waste surfaces from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) The owner or operator shall inspect the internal floating roof components as follows except as provided for in paragraph (b)(1)(iii) of this section:

(A) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., man-holes and roof hatches) at least once every 12 months after initial fill, and

(B) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(iii) As an alternative to performing the inspections specified in paragraph (b)(1)(ii) of this section for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting

requirements specified in § 63.697 of this subpart.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(2) Owners and operators that use a tank equipped with an external floating roof in accordance with the provisions of § 63.685(f) of this subpart shall meet the following requirements:

(i) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(A) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(B) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 days after initial operation of the separator following installation of the floating roof and, thereafter, at least once every year. Prior to each inspection, the owner or operator shall notify the Administrator in accordance with the reporting requirements specified in § 63.697 of this subpart.

(C) If a tank ceases to hold off-site material for a period of 1 year or more, subsequent introduction of off-site material into the tank shall be considered an initial operation for the purposes of paragraphs (b)(2)(i)(A) and (b)(2)(i)(B) of this section.

(D) The owner shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure.

(I) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(2) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

(3) For a seal gap measured under paragraph (b)(2) of this section, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(4) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal perimeter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in § 63.685(f)(1) of this subpart.

(E) In the event that the seal gap measurements do not conform to the specifications in § 63.685(f)(1) of this subpart, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(ii) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(A) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches,

access covers, caps, or other closure devices.

(B) The owner or operator shall perform the inspections following installation of the external floating roof and, thereafter, at least once every year.

(C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(D) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696(d) of this subpart.

(3) Owners and operators that use a tank equipped with a fixed roof in accordance with the provisions of § 63.685(g) of this subpart shall meet the following requirements:

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b)(4) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696(e) of this subpart.

(4) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (b)(1), (b)(2), or (b)(3) of this section in the following manner:

(i) The owner or operator shall within 45 calendar days of detecting the defect either repair the defect or empty the tank and remove it from service. If within this 45-day period the defect cannot be repaired or the tank cannot be removed from service without disrupting operations at the plant site,

the owner or operator is allowed two 30-day extensions. In cases when an owner or operator elects to use a 30-day extension, the owner or operator shall prepare and maintain documentation describing the defect, explaining why alternative storage capacity is not available, and specify a schedule of actions that will ensure that the control equipment will be repaired or the tank emptied as soon as possible.

(ii) When a defect is detected during an inspection of a tank that has been emptied and degassed, the owner or operator shall repair the defect before refilling the tank.

(c) Owners and operators that use a closed vent system in accordance with the provisions of § 63.693 of this subpart shall meet the following inspection and monitoring requirements:

(1) Each closed-vent system that is used to comply with § 63.693(c)(1)(i) of this subpart shall be inspected and monitored in accordance with the following requirements:

(i) At initial startup, the owner or operator shall monitor the closed-vent system components and connections using the procedures specified in § 63.693(k) of this subpart to demonstrate that the closed-vent system operates with no organic detectable emissions.

(ii) After initial startup, the owner or operator shall inspect and monitor the closed-vent system as follows:

(A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air emissions. The owner or operator shall monitor a component or connection using the procedures specified in § 63.693(k) of this subpart to demonstrate that it operates with no detectable organic emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

(B) Closed-vent system components or connections other than those specified in paragraph (c)(1)(ii)(A) of this

section, shall be monitored at least once per year using the procedures specified in § 63.693(k) of this subpart to demonstrate that components or connections operate with no detectable organic emissions.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of paragraph (3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in § 63.696 of this subpart.

(2) Each closed-vent system that is used to comply with § 63.693(c)(1)(ii) of this subpart shall be inspected and monitored in accordance with the following requirements:

(i) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping; loose connections; or broken or missing caps or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the closed-vent system and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (3) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(3) The owner or operator shall repair all detected defects as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection.

(ii) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.696 of this subpart.

(d) Owners and operators that use a transfer system equipped with a cover in accordance with the provisions of § 63.689(c)(1) of this subpart shall meet the following inspection requirements:

(1) The cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover sections or between the cover and its mounting; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the cover and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (5) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.696 of this subpart.

(5) The owner or operator shall repair all detected defects as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (c)(5)(ii) of this section.

(ii) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.696 of this subpart.

§ 63.696 Recordkeeping requirements.

(a) The owner or operator subject to this subpart shall comply with the recordkeeping requirements in § 63.10 under 40 CFR 63 subpart A—General Provisions that are applicable to this subpart as specified in Table 2 of this subpart.

(b) The owner or operator of a control device subject to this subpart shall maintain the records in accordance with the requirements of 40 CFR 63.10 of this part.

(c) [Reserved]

(d) Each owner or operator using an internal floating roof to comply with the tank control requirements specified in § 63.685(e) of this subpart or

using an external floating roof to comply with the tank control requirements specified in § 63.685(f) of this subpart shall prepare and maintain the following records:

(1) Documentation describing the floating roof design and the dimensions of the tank.

(2) A record for each inspection required by § 63.695(b) of this subpart, as applicable to the tank, that includes the following information: a tank identification number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(3) The owner or operator shall record for each defect detected during inspections required by § 63.695(b) of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.695(b)(4) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(4) Owners and operators that use a tank equipped with an external floating roof in accordance with the provisions of § 63.685(f) of this subpart shall prepare and maintain records for each seal gap inspection required by § 63.695(b) describing the results of the seal gap measurements. The records shall include the date of that the measurements are performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in § 63.695(b) of this subpart, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the separator was emptied, if necessary.

(e) Each owner or operator using a fixed roof to comply with the tank control requirements specified in § 63.685(g) of this subpart shall prepare and maintain the following records:

(1) A record for each inspection required by § 63.695(b) of this subpart, as applicable to the tank, that includes the following information: a tank identification

number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(2) The owner or operator shall record for each defect detected during inspections required by § 63.695(b) of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.695(b)(4) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(f) Each owner or operator using an enclosure to comply with the tank control requirements specified in § 63.685(i) of this subpart shall prepare and maintain records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.

(g) An owner or operator shall record, on a semiannual basis, the information specified in paragraphs (g)(1) and (g)(2) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.693(d) through (h) of this subpart, as applicable.

(1) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(2) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during these 6 months that the control device did not meet the requirement of § 63.693 (d) through (h) of this subpart, as applicable, due to planned routine maintenance.

(h) An owner or operator shall record the information specified in paragraphs (h)(1) through (h)(3) of this section for those unexpected control device system malfunctions that would require the control device not to meet the requirements of § 63.693 (d) through (h) of this subpart, as applicable.

(1) The occurrence and duration of each malfunction of the control device system.

(2) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(3) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

§ 63.697 Reporting requirements.

(a) The owner or operator subject to this subpart shall comply with the notification requirements in § 63.9 and the reporting requirements in § 63.10 under 40 CFR 63 subpart A—General Provisions that are applicable to this subpart as specified in Table 2 of this subpart.

(b) The owner or operator of a control device used to meet the requirements of § 63.693 of this subpart shall submit the following reports to the Administrator:

(1) A Notification of Performance Tests specified in § 63.7 and § 63.9(g) of this part,

(2) Performance test reports specified in § 63.10(d)(2) of this part

(3) Startup, shutdown, and malfunction reports specified in § 63.10(d)(5) of this part,

(i) If actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are not completely consistent with the procedures specified in the source's startup, shutdown, and malfunction plan specified in § 63.6(e)(3) of this part, the owner or operator shall state such information in the report. The startup, shutdown, or malfunction report shall consist of a letter, containing the name, title, and signature of the responsible official who is certifying

ing its accuracy, that shall be submitted to the Administrator, and

(ii) Separate startup, shutdown, or malfunction reports are not required if the information is included in the report specified in paragraph (b)(6) of this section.

(4) A summary report specified in § 63.10(e)(3) of this part shall be submitted on a semi-annual basis (i.e., once every 6-month period).

(c) Each owner or operator using an internal floating roof or external floating roof to comply with the Tank Level 2 control requirements specified in § 63.685(d) of this subpart shall notify the Administrator in advance of each inspection required under § 63.695(b) of this subpart to provide the Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Administrator of the date and location of the inspection as follows:

(1) Prior to each inspection to measure external floating roof seal gaps as required under § 63.695(b) of this subpart, written notification shall be prepared and sent by the owner or operator so that it is received by the Administrator at least 30 calendar days before the date the measurements are scheduled to be performed.

(2) Prior to each visual inspection of an internal floating roof or external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (c)(3) of this section.

(3) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Administrator as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by

the Administrator at least 7 calendar days before refilling the tank.

§ 63.698 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State

under section 112(d) of the Act, the authority listed in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority will not be delegated to States for § 63.694 of this subpart.

TABLE 1 TO SUBPART DD.—LIST OF HAZARDOUS AIR POLLUTANTS (HAP) FOR SUBPART DD

CAS No. ^a	Chemical name	f _{m 305}
75070	Acetaldehyde	1.000
75058	Acetonitrile	0.989
98862	Acetophenone	0.314
107028	Acrolein	1.000
107131	Acrylonitrile	0.999
107051	Allyl chloride	1.000
71432	Benzene (includes benzene in gasoline)	1.000
98077	Benzotrichloride (isomers and mixture)	0.958
100447	Benzyl chloride	1.000
92524	Biphenyl	0.864
542881	Bis(chloromethyl)ether ^b	0.999
75252	Bromoform	0.998
106990	1,3-Butadiene	1.000
75150	Carbon disulfide	1.000
56235	Carbon tetrachloride	1.000
43581	Carbonyl sulfide	1.000
133904	Chloramben	0.633
108907	Chlorobenzene	1.000
67663	Chloroform	1.000
107302	Chloromethyl methyl ether ^b	1.000
126998	Chloroprene	1.000
98828	Cumene	1.000
94757	2,4-D, salts and esters	0.167
334883	Diazomethane ^c	0.999
132649	Dibenzofurans	0.967
96128	1,2-Dibromo-3-chloropropane	1.000
106467	1,4-Dichlorobenzene(p)	1.000
107062	Dichloroethane (Ethylene dichloride)	1.000
111444	Dichloroethyl ether (Bis(2-chloroethyl ether)	0.757
542756	1,3-Dichloropropene	1.000
79447	Dimethyl carbamoyl chloride ^c	0.150
57147	1,1-Dimethyl hydrazine	0.383
64675	Diethyl sulfate	0.0025
77781	Dimethyl sulfate	0.086
121697	N,N-Dimethylaniline	0.0008
51285	2,4-Dinitrophenol	0.0077
121142	2,4-Dinitrotoluene	0.0848
123911	1,4-Dioxane (1,4-Diethyleneoxide)	0.869
106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	0.939
106887	1,2-Epoxybutane	1.000
140885	Ethyl acrylate	1.000
100414	Ethyl benzene	1.000
75003	Ethyl chloride (Chloroethane)	1.000
106934	Ethylene dibromide (Dibromoethane)	0.999
107062	Ethylene dichloride (1,2-Dichloroethane)	1.000
151564	Ethylene imine (Aziridine)	0.867
75218	Ethylene oxide	1.000
75343	Ethylidene dichloride (1,1-Dichloroethane)	1.000
118741	Glycol ethers ^d	(^e)
87683	Hexachlorobenzene	0.97
67721	Hexachlorobutadiene	0.88
110543	Hexachloroethane	0.499
78591	Hexane	1.000
58899	Isophorone	0.506
67561	Lindane (all isomers)	1.000
74839	Methanol	0.855
74873	Methyl bromide (Bromomethane)	1.000
71556	Methyl chloride (Chloromethane)	1.000
78933	Methyl chloroform (1,1,1-Trichloroethane)	1.000
74884	Methyl ethyl ketone (2-Butanone)	0.990
108101	Methyl iodide (Iodomethane)	1.000
624839	Methyl isobutyl ketone (Hexone)	0.979
80626	Methyl isocyanate	1.000
80626	Methyl methacrylate	0.999

TABLE 1 TO SUBPART DD.—LIST OF HAZARDOUS AIR POLLUTANTS (HAP) FOR SUBPART DD—
Continued

CAS No. ^a	Chemical name	f _{m305}
1634044	Methyl tert butyl ether	1.000
75092	Methylene chloride (Dichloromethane)	1.000
91203	Naphthalene	0.994
98953	Nitrobenzene	0.394
79469	2-Nitropropane	0.989
82688	Pentachloronitrobenzene (Quintobenzene)	0.839
87865	Pentachlorophenol	0.0898
75445	Phosgene ^c	1.000
123386	Propionaldehyde	0.999
78875	Propylene dichloride (1,2-Dichloropropane)	1.000
75569	Propylene oxide	1.000
75558	1,2-Propylenimine (2-Methyl aziridine)	0.945
100425	Styrene	1.000
96093	Styrene oxide	0.830
79345	1,1,2,2-Tetrachloroethane	0.999
127184	Tetrachloroethylene (Perchloroethylene)	1.000
108883	Toluene	1.000
95534	o-Toluidine	0.152
120821	1,2,4-Trichlorobenzene	1.000
71556	1,1,1-Trichloroethane (Methyl chlorform)	1.000
79005	1,1,2-Trichloroethane (Vinyl trichloride)	1.000
79016	Trichloroethylene	1.000
95954	2,4,5-Trichlorophenol	0.108
88062	2,4,6-Trichlorophenol	0.132
121448	Triethylamine	1.000
540841	2,2,4-Trimethylpentane	1.000
108054	Vinyl acetate	1.000
593602	Vinyl bromide	1.000
75014	Vinyl chloride	1.000
75354	Vinylidene chloride (1,1-Dichloroethylene)	1.000
1330207	Xylenes (isomers and mixture)	1.000
95476	o-Xylenes	1.000
108383	m-Xylenes	1.000
106423	p-Xylenes	1.000

Notes:f_{m305}=Method 305 fraction measure factor

a. CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

b. Denotes a HAP that hydrolyzes quickly in water, but the hydrolysis products are also HAP chemicals.

c. Denotes a HAP that may react violently with water, exercise caustic is an expected analyte.

d. Denotes a HAP that hydrolyzes slowly in water.

e. Several glycol ethers meet the criteria used to select HAP for the purposes of this subpart. The f_{m305} factors for some of the more common glycol ethers are listed below:Ethylene glycol dimethyl ether (f_{m305}=0.861)Ethylene glycol monoethyl ether acetate (f_{m305}=0.0887)Ethylene glycol monomethyl ether acetate (f_{m305}=0.0926)Diethylene glycol diethyl ether (f_{m305}=0.216)

TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD

Subpart A reference	Applies to subpart DD	Comment
63.1(a)(1)	Yes.	Subpart DD (this table) specifies applicability of each paragraph in subpart A to subpart DD.
63.1(a)(2)	Yes.	
63.1(a)(3)	Yes.	
63.1(a)(4)	No	
63.1(a)(5)–63.1(a)(9)	No.	Subpart DD specifies its own applicability.
63.1(a)(10)	Yes.	
63.1(a)(11)	Yes.	
63.1(a)(12)	Yes.	
63.1(a)(13)	Yes.	Subpart DD explicitly specifies requirements that apply.
63.1(a)(14)	Yes.	
63.1(b)(1)	No	
63.1(b)(2)	Yes.	
63.1(b)(3)	No.	Area sources are not subject to subpart DD.
63.1(c)(1)	No	
63.1(c)(2)	No	

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TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD—Continued

Subpart A reference	Applies to subpart DD	Comment
63.1(c)(3)	No.	Except that sources are not required to submit notifications overridden by this table.
63.1(c)(4)	Yes.	
63.1(c)(5)	Yes	
63.1(d)	No.	§ 63.681 of subpart DD specifies that if the same term is defined in subparts A and DD, it shall have the meaning given in subpart DD.
63.1(e)	No.	
63.2	Yes	
63.3	Yes.	Reserved.
63.4(a)(1)–63.4(a)(3)	Yes.	
63.4(a)(4)	No	
63.4(a)(5)	Yes.	Except replace term “source” and “stationary source” in § 63.5(a)(1) of subpart A with “affected source.”
63.4(b)	Yes.	
63.4(c)	Yes.	
63.5(a)(1)	Yes	Except the cross-reference to § 63.9(b) is changed to § 63.9(b)(4) and (5). Subpart DD overrides § 63.9(b)(2) and (b)(3).
63.5(a)(2)	Yes.	
63.5(b)(1)	Yes.	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes.	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes.	Reserved.
63.5(b)(6)	Yes.	
63.5(c)	No	
63.5(d)(1)(i)	Yes.	Subpart DD specifies compliance dates for sources subject to subpart DD.
63.5(d)(1)(ii)	Yes.	
63.5(d)(1)(iii)	Yes.	
63.5(d)(2)	No.	May apply when standards are proposed under section 112(f) of the Clean Air Act.
63.5(d)(3)	Yes.	
63.5(d)(4)	Yes.	
63.5(e)	Yes.	§ 63.697 of subpart DD includes notification requirements.
63.5(f)(1)	Yes.	
63.5(f)(2)	Yes.	
63.6(a)	Yes.	§ 63.680 of subpart DD specifies the compliance date.
63.6(b)(1)	No	
63.6(b)(2)	No.	
63.6(b)(3)	Yes.	Subpart DD does not require opacity and visible emission standards. Except for § 63.6(i)(15), which is reserved.
63.6(b)(4)	No	
63.6(b)(5)	No	
63.6(b)(6)	No.	Subpart DD specifies required testing and compliance demonstration procedures.
63.6(b)(7)	No.	
63.6(c)(1)	No	
63.6(c)(2)–63.6(c)(4)	No.	Subpart DD specifies the use of monitoring data in determining compliance with subpart DD.
63.6(c)(5)	Yes.	
63.6(d)	No.	
63.6(e)	Yes.	Subpart DD does not require opacity and visible emission standards. Except for § 63.6(i)(15), which is reserved.
63.6(f)(1)	Yes.	
63.6(f)(2)(i)	Yes.	
63.6(f)(2)(ii)	Yes	Subpart DD does not require opacity and visible emission standards. Except for § 63.6(i)(15), which is reserved.
63.6(f)(2)(iii) (A), (B), and (C)	Yes.	
63.6(f)(2)(iii) (D)	No.	
63.6(f)(2)(iv)	Yes.	Subpart DD specifies required testing and compliance demonstration procedures.
63.6(f)(2)(v)	Yes.	
63.6(f)(2)(vi)	Yes.	
63.6(g)	Yes.	Subpart DD does not require opacity and visible emission standards. Except for § 63.6(i)(15), which is reserved.
63.6(h)	No	
63.6(i)	Yes	
63.6(j)	Yes.	Subpart DD specifies required testing and compliance demonstration procedures.
63.7(a)(1)	No	
63.7(a)(2)	Yes.	
63.7(a)(3)	Yes.	Subpart DD does not require opacity and visible emission standards. Except for § 63.6(i)(15), which is reserved.
63.7(b)	No.	
63.7(c)	No.	
63.7(d)	Yes.	Subpart DD specifies required testing and compliance demonstration procedures.
63.7(e)(1)	Yes.	

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TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD—Continued

Subpart A reference	Applies to subpart DD	Comment
63.7(e)(2)	Yes.	Subpart DD specifies test methods and procedures.
63.7(e)(3)	No	
63.7(e)(4)	Yes.	Subpart DD specifies applicable methods and provides alternatives.
63.7(f)	No	
63.7(g)	Yes.	
63.7(h)(1)	Yes.	
63.7(h)(2)	Yes.	
63.7(h)(3)	Yes.	
63.7(h)(4)	No.	
63.7(h)(5)	Yes.	
63.8(a)	No.	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	Subpart DD specifies locations to conduct monitoring.
63.8(b)(3)	Yes.	
63.8(c)(1)(i)	Yes.	
63.8(c)(1)(ii)	Yes.	
63.8(c)(1)(iii)	Yes.	
63.8(c)(2)	Yes.	
63.8(c)(3)	Yes.	Subpart DD specifies monitoring frequency
63.8(c)(4)	No	
63.8(c)(5)—63.8(c)(8)	No.	
63.8(d)	No.	
63.8(e)	No.	
63.8(f)(1)	Yes.	
63.8(f)(2)	Yes.	
63.8(f)(3)	Yes.	
63.8(f)(4)(i)	Yes.	
63.8(f)(4)(ii)	Yes.	
63.8(f)(4)(iii)	No.	
63.8(f)(5)(i)	Yes.	
63.8(f)(5)(ii)	No.	
63.8(f)(5)(iii)	Yes.	
63.8(f)(6)	Yes.	
63.8(g)	Yes.	
63.9(a)	Yes.	
63.9(b)(1)(i)	Yes.	
63.9(b)(1)(ii)	No.	
63.9(b)(2)	Yes.	
63.9(b)(3)	No.	
63.9(b)(4)	Yes.	
63.9(b)(5)	Yes.	
63.9(c)	Yes.	
63.9(d)	Yes.	
63.9(e)	No.	
63.9(f)	No.	
63.9(g)	No.	
63.9(h)	Yes.	
63.9(i)	Yes.	
63.9(j)	No.	
63.10(a)	Yes.	
63.10(b)(1)	Yes.	
63.10(b)(2)(i)	Yes.	
63.10(b)(2)(ii)	Yes.	
63.10(b)(2)(iii)	No.	
63.10(b)(2)(iv)	Yes.	
63.10(b)(2)(v)	Yes.	
63.10(b)(2)(vi)—(ix)	No.	
63.10(b)(2)(x)	Yes.	
63.10(b)(2)(xii)—(xiv)	No.	
63.10(b)(3)	No.	
63.10(c)	No.	
63.10(d)(1)	No.	
63.10(d)(2)	Yes.	
63.10(d)(3)	No.	
63.10(d)(4)	Yes.	
63.10(d)(5)(i)	Yes.	
63.10(d)(5)(ii)	Yes.	
63.10(e)	No.	
63.10(f)	Yes.	

TABLE 2 TO SUBPART DD.—APPLICABILITY OF PARAGRAPHS IN 40 CFR 63 SUBPART A, GENERAL PROVISIONS, TO SUBPART DD—Continued

Subpart A reference	Applies to subpart DD	Comment
63.11–63.15	Yes.	

Note: Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

TABLE 3 TO SUBPART DD.—TANK CONTROL LEVELS FOR TANKS AT EXISTING AFFECTED SOURCES AS REQUIRED BY 40 CFR 63.685(b)(1)

Tank design capacity (cubic meters)	Maximum HAP vapor pressure of off-site material managed in tank (kilopascals)	Tank control level
Design capacity less than 75 m ³	Maximum HAP vapor pressure less than 76.6 kPa	Level 1.
Design capacity equal to or greater than 75 m ³ and less than 151 m ³ .	Maximum HAP vapor pressure less than 27.6 kPa	Level 1.
	Maximum HAP vapor pressure equal to or greater than 27.6 kPa.	Level 2.
Design capacity equal to or greater than 151 m ³	Maximum HAP vapor pressures less than 5.2 kPa	Level 1.
	Maximum HAP vapor pressure equal to or greater than 5.2 kPa.	Level 2.

TABLE 4 TO SUBPART DD.—TANK CONTROL LEVELS FOR TANKS AT NEW AFFECTED SOURCES AS REQUIRED BY 40 CFR 63.685(b)(2)

Tank design capacity (cubic meters)	Maximum HAP vapor pressure of off-site material managed in tank (kilopascals)	Tank control level
Design capacity less than 38 m ³	Maximum HAP vapor pressure less than 76.6 kPa	Level 1.
Design capacity equal to or greater than 38 m ³ and less than 151 m ³ .	Maximum HAP vapor pressure less than 13.1 kPa	Level 1.
	Maximum HAP vapor pressure equal to or greater than 13.1 kPa.	Level 2.
Design capacity equal to or greater than 151 m ³	Maximum HAP vapor pressure less than 0.7 kPa	Level 1.
	Maximum HAP vapor pressure equal to or greater than 0.7 kPa.	Level 2.

Subpart EE—National Emission Standards for Magnetic Tape Manufacturing Operations

SOURCE: 59 FR 64596, Dec. 15, 1994, unless otherwise noted.

§63.701 Applicability.

(a) Except as specified in paragraph (b) of this section, the provisions of this subpart apply to:

(1) Each new and existing magnetic tape manufacturing operation located at a major source of hazardous air pollutant (HAP) emissions; and

(2) A magnetic tape manufacturing operation for which the owner or operator chooses to use the provisions of §63.703(b) and (h) to obtain a Federally enforceable limit on its potential to emit HAP.

EXPLANATORY NOTE: A reason the owner or operator would make the choice described in paragraph (a)(2) of this section is if the plant site, without this limit, would be a major source. The owner or operator could use this limit, which would establish the potential to emit from magnetic tape manufacturing operations, in conjunction with the potential to emit from the other HAP emission points at the stationary source, to be an area source. Note, however, that an owner or operator is not required to use the provisions in §63.703(b) and (h) to determine the potential to emit HAP from magnetic tape manufacturing operations.

(b) This subpart does not apply to the following:

(1) Research or laboratory facilities; and

(2) Any coating operation that produces a quantity of magnetic tape that is 1 percent or less of total production

(in terms of total square footage coated) from that coating operation in any 12-month period.

(c) The affected source subject to this standard is the magnetic tape manufacturing operation, as defined in § 63.702.

(d) An owner or operator of an existing affected source subject to the provisions of this subpart shall comply according to the following schedule:

(1) Within 3 years after the effective date of the standard, if the owner or operator is required to install a new add-on air pollution control device to meet the requirements of § 63.703(c) or (g); or

(2) Within 2 years after the effective date of the standard, if a new add-on air pollution control device is not needed to comply with § 63.703(c) or (g) of these standards.

(e) The compliance date for an owner or operator of a new affected source subject to the provisions of this subpart is immediately upon startup of the affected source.

(f) The provisions of this subpart apply during periods of startup and shutdown, and whenever magnetic tape manufacturing operations are taking place.

(g) Owners or operators of affected sources subject to the provisions of this subpart shall also comply with the requirements of subpart A as identified in Table 1, according to the applicability of subpart A to such sources.

(h) In any title V permit for an affected source, all research or laboratory facilities that are exempt from the requirements of this subpart shall be clearly identified.

§ 63.702 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Clean Air Act and in subpart A of this part.

Add-on air pollution control device means equipment installed at the end of a process vent exhaust stack or stacks that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Examples are incinerators, condensers, carbon adsorbers, and biofiltration units. Transfer equipment and duct-

work are not considered in and of themselves add-on air pollution control devices.

Bag splitter means a device for enclosed transfer of particulates. A bag of raw materials is placed in a hopper, the hopper is closed, and an internal mechanism slits the bag, releasing the particulates into either a closed conveyor that feeds the mix preparation equipment or into the mix preparation equipment itself.

Base substrate means the surface, such as plastic or paper, to which a coating is applied.

Capture efficiency means the fraction of all organic vapors or other pollutants generated by a process that are directed to an add-on air pollution control device.

Capture device means a hood, enclosed room, or other means of collecting HAP vapors or other pollutants into a duct that exhausts to an add-on air pollution control device.

Carbon adsorber vessel means one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source.

Car seal means a seal that is placed on a device that is used either to open a closed valve or close an opened valve so that the position of the valve cannot be changed without breaking the seal.

Closed system for flushing fixed lines means a system in which the line to be flushed is disconnected from its original position and connected to two closed containers, one that contains cleaning solvent and one that is empty. Solvent is flushed from the container with cleaning solvent, through the line, and into the empty containers.

Coater or coating applicator means the apparatus used to apply a coating to a continuous base substrate.

Coating application means the process by which the coating mix is applied to the base substrate.

Coating operation means any coater, flashoff area, and drying oven located between a base substrate unwind station and a base substrate rewind station that coats a continuous base substrate.

Control device efficiency means the ratio of the emissions collected or destroyed by an add-on air pollution control device to the total emissions that are introduced to the control device, expressed as a percentage.

Day means a 24-consecutive-hour period.

Drying oven means a chamber that uses heat to bake, cure, polymerize, or dry a surface coating; if the coating contains volatile solvents, the volatile portion is evaporated in the oven.

Enclosed transfer method means a particulate HAP transfer method that uses an enclosed system to prevent particulate HAP from entering the atmosphere as dust. Equipment used for this purpose may include vacuum injection systems or other mechanical transfer systems, bag slitters, or supersacks.

Equivalent diameter means four times the area of an opening divided by its perimeter.

Facility means all contiguous or adjoining property that is under common ownership or control in which magnetic tape manufacturing is performed. The definition includes properties that are separated only by a road or other public right-of-way.

Flashoff area means the portion of a coating operation between the coater and the drying oven where solvent begins to evaporate from the coated base substrate.

Flushing of fixed lines means the flushing of solvent through lines that are typically fixed and are not associated with the cleaning of a tank, such as the line from the mix room to the coater.

Freeboard ratio means the vertical distance from the surface of the liquid to the top of the sink or tank (freeboard height) divided by the smaller of the length or width of the sink or tank evaporative area.

Magnetic coatings means coatings applied to base substrates to make magnetic tape. Components of magnetic coatings may include: Magnetic particles, binders, dispersants, conductive pigments, lubricants, solvents, and other additives.

Magnetic particles means particles in the coating mix that have magnetic properties. Examples of magnetic particles used in magnetic tape manufac-

turing are: γ -oxide, doped iron oxides, chromium dioxide, barium ferrite, and metallic particles that usually consist of elemental iron, cobalt, and/or nickel.

Magnetic tape means any flexible base substrate that is covered on one or both sides with a coating containing magnetic particles and that is used for audio recording, video recording, or any type of information storage.

Magnetic tape manufacturing operation means all of the emission points within a magnetic tape manufacturing facility that are specifically associated with the manufacture of magnetic tape. These include, but are not limited to:

- (1) Solvent storage tanks;
- (2) Mix preparation equipment;
- (3) Coating operations;
- (4) Waste handling devices;
- (5) Particulate transfer operations;
- (6) Wash sinks for cleaning removable parts;
- (7) Cleaning involving the flushing of fixed lines;
- (8) Wastewater treatment systems; and
- (9) Condenser vents associated with distillation and stripping columns in the solvent recovery area, but not including the vent on a condenser that is used as the add-on air pollution control device.

Mill means the pressurized equipment that uses the dispersing action of beads, combined with the high shearing forces of the centrifugal mixing action, to disperse the aggregates of magnetic particles thoroughly without reducing particle size.

Mix preparation equipment means the vessels, except for mills, used to prepare the magnetic coating.

Natural draft opening means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

Nonregenerative carbon adsorber means a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel.

Operating parameter value means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

Overall HAP control efficiency means the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency.

Particulate means any material, except uncombined water, that exists as liquid or solid particles such as dust, smoke, mist, or fumes at standard conditions (760 millimeters of mercury, 0 degrees celsius).

Particulate HAP transfer means the introduction of a particulate HAP into other dry ingredients or a liquid solution.

Removable parts cleaning means cleaning of parts that have been moved from their normal position to a wash tank or sink containing solvent for the purpose of cleaning.

Research or laboratory facility means any stationary source whose primary purpose is to conduct research and development to develop new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

Separator means a device in the wastewater treatment system in which immiscible solvent is physically separated from the water with which it is mixed.

Solvent storage tanks means the stationary tanks that are associated with magnetic tape operations and that store virgin solvent, spent solvent, cleaning solvent, solvent at any stage of the solvent recovery process, or any volatile compound. They do not serve a process function.

Solvent recovery area means the collection of devices used to remove HAP emissions from process air, to recover the HAP, and to purify the HAP. Typically, this area contains a control device such as a carbon adsorber or con-

denser, the wastewater treatment system, and the distillation columns.

Solvent recovery device means, for the purposes of this subpart, an add-on air pollution control device in which HAP is captured rather than destroyed. Examples include carbon adsorption systems and condensers.

Supersack means a container of particulate from the manufacturer or supplier with attached feed tubes and that is used to transfer particulate under the following conditions: the feed tubes are attached directly to the mix preparation equipment, the attachment interface is sealed, and all openings on the mix transfer equipment are closed to the atmosphere.

Temporary total enclosure means a total enclosure that is constructed for the sole purpose of measuring the fugitive emissions from an affected source. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it conforms to the requirements found in §63.705(c)(4)(i) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

Total enclosure means a structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100 percent capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the

entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. A permanent enclosure that meets the requirements found in § 63.705(c)(4)(i) is a total enclosure.

Utilize means the use of HAP that is delivered to mix preparation equipment for the purpose of formulating coatings, the use of any other HAP (e.g., dilution solvent) that is added at any point in the manufacturing process, and the use of any HAP for cleaning activities. Alternatively, annual HAP utilization can be determined as net usage; that is, the HAP inventory at the beginning of a 12-month period, plus the amount of HAP purchased during the 12-month period, minus the amount of HAP in inventory at the end of a 12-month period.

Vacuum injection system means a system in which a vacuum draws particulate from a storage container into a closed system that transfers particulates into the mix preparation equipment.

Volatile organic compound (VOC) means any organic compound that participates in atmospheric photochemical reactions or that is measured by EPA Test Methods 18, 24, or 25A in appendix A of part 60 or an alternative test method as defined in § 63.2.

Volatile organic hazardous air pollutant (VOHAP) concentration means the concentration of an individually-speciated organic HAP in a wastewater discharge that is measured by Method 305 of appendix A to 40 CFR part 63.

Waste handling means processing or treatment of waste (liquid or solid) that is generated as a by-product of either the magnetic tape production process or cleaning operations.

Waste handling device means equipment that is used to separate solvent from solid waste (e.g., filter dryers) or liquid waste (e.g., pot stills and thin film evaporators). The solvents are recovered by heating, condensing, and collection.

Wastewater discharge means the water phase that is discharged from the sepa-

rator in a wastewater treatment system.

Wastewater treatment system means the assortment of devices in which the solvent/water mixture, generated when the carbon bed in the carbon adsorber is desorbed by steam, is treated to remove residual organics in the water.

(b) The nomenclature used in this subpart is defined when presented or has the meaning given below:

(1) A_k = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) C_{aj} = the concentration of HAP or VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) C_{bi} = the concentration of HAP or VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) C_{di} = the concentration of HAP or VOC in each gas stream (i) entering the emission control device from the affected source, in parts per million by volume.

(5) C_{fk} = the concentration of HAP or VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(6) C_{gv} = the concentration of HAP or VOC in each uncontrolled gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual carbon adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts to the individual carbon adsorber vessels.

(7) C_{hv} = the concentration of HAP or VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8) E = the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9) F = the HAP or VOC emission capture efficiency of the HAP or VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10) FV = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11) G = the calculated mass of HAP per volume of coating solids (in kilograms per liter) contained in a batch of coating.

(12) H_v = the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(13) H_{sys} = the efficiency of the carbon adsorption system calculated when each carbon adsorber vessel has an individual exhaust stack (expressed as a fraction).

(14) L_{si} = the volume fraction of solids in each batch of coating (i) applied as determined from the formulation records at the affected source.

(15) M_{ci} = the total mass in kilograms of each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7-day period, as appropriate, as determined from records at the affected source. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the mass of the coating has been determined, appropriate adjustments shall be made to account for them.

(16) M_r = the total mass in kilograms of HAP or VOC recovered for a 7-day period.

(17) Q_{aj} = the volumetric flow rate of each gas stream (j) exiting the emission control device in either dry standard cubic meters per hour when EPA Method 18 in appendix A of part 60 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(18) Q_{bi} = the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(19) Q_{di} = the volumetric flow rate of each gas stream (i) entering the emission control device from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC con-

centration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(20) Q_{fk} = the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(21) Q_{gv} = the volumetric flow rate of each gas stream entering each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration. For purposes of calculating the efficiency of the individual carbon adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that carbon adsorber vessel.

(22) Q_{hv} = the volumetric flow rate of each gas stream exiting each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(23) $Q_{in i}$ = the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct in standard cubic meters per hour (wet basis).

(24) $Q_{out j}$ = the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood in standard cubic meters per hour (wet basis).

(25) R = the overall HAP or VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(26) RS_i = the total mass in kilograms of HAP or VOC retained in the coated substrate after oven drying for a given magnetic tape product.

(27) V_{ci} = the total volume in liters of each batch of coating (i) applied as determined from records at the affected source.

(28) W_{oi} = the weight fraction of HAP or VOC in each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7-day period, as appropriate, as determined by EPA Method 24 or formulation data. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the weight fraction of HAP or VOC in the coating has been determined, appropriate adjustments shall be made to account for them.

§ 63.703 Standards.

(a) Each owner or operator of any affected source that is subject to the requirements of this subpart shall comply with the requirements of this subpart on and after the compliance dates specified in § 63.701.

(b)(1) The owner or operator subject to § 63.701(a)(2) shall determine limits on the amount of HAP utilized (see definition) in the magnetic tape manufacturing operation as the values for the potential to emit HAP from the magnetic tape manufacturing operation.

(2) The limits on the amount of HAP utilized in the magnetic tape manufacturing operations shall be determined in the following manner.

(i) The potential to emit each HAP from each emission point at the stationary source, other than those from magnetic tape manufacturing operations, shall be calculated and converted to the units of Mg/yr (or tons/yr).

(ii) The limits on the HAP utilized in the magnetic tape manufacturing operation shall be determined as the values that, when summed with the values in paragraph (b)(2)(i) of this section, are less than 9.1 Mg/yr (10 tons/yr) for each individual HAP and 22.7 Mg/yr (25 tons/yr) for the combination of HAP.

(3) The limits on the HAP utilized determined in paragraph (b)(2) of this section shall be in terms of Mg/yr (or tons/yr), calculated monthly on a rolling 12-month average. The owner or operator shall not exceed these limits.

(4) An owner or operator subject to paragraph (b) of this section shall meet the requirements in paragraph (h) of this section.

(5) A magnetic tape manufacturing operation that is subject to paragraph (b) of this section and is located at an area source is not subject to paragraphs (c) through (g) of this section.

(c) Except as provided by § 63.703(b), each owner or operator of an affected source subject to this subpart shall limit gaseous HAP emitted from each solvent storage tank, piece of mix preparation equipment, coating operation, waste handling device, and condenser vent in solvent recovery as specified in paragraphs (c)(1) through (c)(5) of this section:

(1) Except as otherwise allowed in paragraphs (c)(2), (3), (4), and (5) of this section, each owner or operator shall limit gaseous HAP emitted from each solvent storage tank, piece of mix preparation equipment, coating operation, waste handling device, and condenser vent in solvent recovery by an overall HAP control efficiency of at least 95 percent.

(2) An owner or operator that uses an incinerator to control emission points listed in paragraph (c)(1) of this section may choose to meet the overall HAP control efficiency requirement of paragraph (c)(1) of this section, or may operate the incinerator such that an outlet HAP concentration of no greater than 20 parts per million by volume (ppmv) by compound on a dry basis is achieved, as long as the efficiency of the capture system is 100 percent.

(3) An owner or operator may choose to meet the requirements of paragraph (c)(1) or (2) of this section by venting the room, building, or enclosure in which the HAP emission point is located to an add-on air pollution control device, as long as the required overall HAP control efficiency of this method is sufficient to meet the requirements of paragraph (c)(1) or (2) of this section.

(4) In lieu of controlling HAP emissions from each solvent storage tank to the level required by paragraph (c)(1) of this section, an owner or operator of an affected source may:

(i) Control HAP emissions from all coating operations by an overall HAP control efficiency of at least 97 percent in lieu of controlling 10 HAP solvent storage tanks that do not exceed 20,000 gallons each in capacity; or

(ii) Control HAP emissions from all coating operations by an overall HAP control efficiency of at least 98 percent in lieu of controlling 15 HAP solvent storage tanks that do not exceed 20,000 gallons each in capacity; or

(iii) Control HAP emissions from all coating operations by an overall HAP control efficiency of at least 99 percent in lieu of controlling 20 HAP solvent storage tanks that do not exceed 20,000 gallons each in capacity.

(iv) Owners or operators choosing to meet the requirements of paragraphs (c)(4)(i), (ii), or (iii) of this section are also subject to the reporting requirement of § 63.707(k).

(5) In lieu of controlling HAP emissions from a coating operation to the level required by paragraph (c)(1) of this section, owners or operators may use magnetic coatings that contain no greater than 0.18 kilograms of HAP per liter of coating solids for that coating operation. For the requirements of this paragraph, §§ 63.6(e)(3), 63.6(f)(1) and (2), 63.8(b)(2) and (3), 63.8(c), 63.8(d), 63.8(e), 63.8(g), 63.9(e) and (g), 63.10(c), 63.10(d)(2), (3), and (5), 63.10(e)(1) and (2), and 63.11 of subpart A do not apply.

(d) *Particulate transfer operations.* Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall:

(1) Use an enclosed transfer method to perform particulate HAP transfer; or

(2) Direct emissions from particulate HAP transfer through a hood or enclosure to a baghouse or fabric filter that exhibits no visible emissions while controlling HAP emissions from particulate HAP transfer.

(e) *Wash sinks for cleaning removable parts.* (1) Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall limit gaseous HAP emissions from each wash sink containing HAP:

(i) So that the overall HAP control efficiency is no less than 88 percent; or

(ii) By maintaining a minimum freeboard ratio of 75 percent in the wash sink at all times when the sink contains HAP.

(2) Owners or operators may meet the requirements of paragraph (e)(1)(i) of this section by venting the room, building, or enclosure in which the

sink is located, as long as the overall HAP control efficiency of this method is demonstrated to be at least 88 percent using the test methods in § 63.705(e).

(3) Wash sinks subject to the control provisions of subpart T of this part are not subject to paragraph (e)(1) or (e)(2) of this section.

(f) *Equipment for flushing fixed lines.*

(1) Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall limit gaseous HAP emissions from each affected set of equipment for flushing fixed lines:

(i) So that the overall HAP control efficiency is at least 95 percent; or

(ii) By using a closed system for flushing fixed lines.

(2) Owners or operators may meet the requirements of paragraph (f)(1)(i) of this section by venting the room, building, or enclosure in which the fixed lines are located, as long as the overall HAP control efficiency of this method is demonstrated to be at least 95 percent using the test methods in § 63.705(f).

(g) *Wastewater treatment systems.* (1) Except as stipulated by § 63.703(b), each owner or operator of an affected source subject to this subpart shall:

(i) Treat the wastewater discharge to remove each HAP from magnetic tape manufacturing operations that is present in the wastewater discharge by at least the fraction removed (F_R) specified in Table 9 of 40 CFR part 63, subpart G; or

(ii) Treat (other than by dilution) the HAP from magnetic tape manufacturing operations that are present in the wastewater discharge such that the exit concentration is less than 50 ppmw of total VOHAP.

(2) The treatment method used to meet the requirements of paragraph (g)(1) of this section shall not transfer emissions from the water to the atmosphere in an uncontrolled manner.

(h)(1) Magnetic tape manufacturing operations that are subject to § 63.703(b) and are not at major sources are not subject to §§ 63.6(e), 63.6(f), 63.6(g), 63.6(i)(4), 63.7, 63.8, 63.9(c) through (h), 63.10(b)(2), 63.10(c), 63.10(d)(2) through (5), 63.10(e), and 63.11 of subpart A.

(2) Magnetic tape manufacturing operations subject to § 63.703(b) shall fulfill the recordkeeping requirements of § 63.706(e) and the reporting requirements of § 63.707 (b), (c), and (j).

(3) An owner or operator of a magnetic tape manufacturing operation subject to § 63.703(b) who chooses to no longer be subject to § 63.703(b) shall notify the Administrator or delegated State of such change. If by no longer being subject to § 63.703(b), the source at which the magnetic tape manufacturing operation is located would become a major source, the owner or operator shall meet the following requirements, starting from the date of such notification:

(i) Comply with paragraphs (c) through (g) of this section, and other provisions of this subpart within the timeframe specified in § 63.6(c)(5); and

(ii) Comply with the HAP utilization limits in § 63.703(b) until the requirements of paragraph (h)(3)(i) of this section are met.

(i) For any solvent storage tank, piece of mix preparation equipment, waste handling device, condenser vent in solvent recovery, wash sink for cleaning removable parts, and set of equipment for flushing of fixed lines, the owner or operator may, instead of meeting the requirements of paragraphs (c)(1), (e)(1)(i), or (f)(1)(i) of this section, vent the gaseous HAP emissions to an add-on air pollution control device other than an incinerator that, in conjunction with capture equipment or ductwork, is designed to achieve an overall HAP control efficiency of at least 95 percent for the emissions from the coating operation, and achieve an alternate outlet concentration limit when coating operations are not occurring, as determined in § 63.704(b)(11)(ii).

(j) The requirements of this subpart do not preclude the use of pressure relief valves and vacuum relief valves for safety purposes.

§ 63.704 Compliance and monitoring requirements.

(a) For owners or operators of an affected source that are using add-on air pollution control equipment or a steam stripper to comply with § 63.703, paragraph (b) of this section identifies the operating parameter to be monitored

to demonstrate continuous compliance. For all owners or operators subject to § 63.703, except § 63.703(b) and (h), regardless of the type of control technique used, paragraph (c) of this section identifies the procedures that must be followed to demonstrate continuous compliance with § 63.703.

(b) *Establishing a limit under § 63.703(i) and operating parameter values.* The owner or operator of an affected source subject to § 63.703 except § 63.703(b) and (h), shall establish the operating parameter value to be monitored for compliance as required by paragraph (c) of this section, in accordance with paragraphs (b)(1) through (b)(11) of this section. An owner or operator subject to § 63.703(i) shall establish a limit as required in paragraph (b)(11)(ii) of this section.

(1) Except as allowed by paragraphs (b)(2), (3), (4), (5), or (9) of this section, for each add-on air pollution control device used to control solvent HAP emissions, the owner or operator shall fulfill the requirements of paragraph (b)(1)(i) or (ii) of this section.

(i) The owner or operator shall establish as a site-specific operating parameter the outlet total HAP or VOC concentration that demonstrates compliance with § 63.703(c)(1), (c)(2), (c)(4), (e)(1)(i), (f)(1)(i), or (i) as appropriate; or

(ii) The owner or operator shall establish as the site-specific operating parameter the control device efficiency that demonstrates compliance with § 63.703(c)(1), (c)(4), (e)(1)(i), and (f)(1)(i).

(iii) When a nonregenerative carbon adsorber is used to comply with § 63.703(c)(1), the site-specific operating parameter value may be established as part of the design evaluation used to demonstrate initial compliance (§ 63.705(c)(6)). Otherwise, the site-specific operating parameter value shall be established during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), (3), or (4).

(2) For each condenser used as the add-on air pollution control device to comply with § 63.703(c), (e)(1)(i), (f)(1)(i) or (i), in lieu of meeting the requirements of § 63.704(b)(1), during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), or

(4), the owner or operator may establish as a site-specific operating parameter the maximum temperature of the condenser vapor exhaust stream and shall set the operating parameter value that demonstrates compliance with § 63.703(c), (e)(1)(i), (f)(1)(i) or (i) as appropriate;

(3) For each thermal incinerator, in lieu of meeting the requirements of § 63.704(b)(1), during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), or (4), the owner or operator may establish as a site-specific operating parameter the minimum combustion temperature and set the operating parameter value that demonstrates compliance with § 63.703(c), (e)(1)(i), or (f)(1)(i), as appropriate.

(4) For each catalytic incinerator, in lieu of meeting the requirements of § 63.704(b)(1), during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), or (4), the owner or operator may establish as site-specific operating parameters the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed, and set the operating parameter values that demonstrate compliance with § 63.703(c), (e)(1)(i), or (f)(1)(i), as appropriate.

(5) For each nonregenerative carbon adsorber, in lieu of meeting the requirements of § 63.704(b)(1), the owner or operator may establish as the site-specific operating parameter the carbon replacement time interval, as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval shall be established either as part of the design evaluation to demonstrate initial compliance (§ 63.705(c)(6)), or during the initial performance test conducted according to the procedures of § 63.705(c)(1), (2), (3), or (4).

(6) Each owner or operator venting solvent HAP emissions from a source through a room, enclosure, or hood, to a control device to comply with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i) shall:

(i) Submit to the Administrator with the compliance status report required

by § 63.9(h) of the General Provisions a plan that:

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained;

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance; and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i), as appropriate; and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(7) For each baghouse or fabric filter used to control particulate HAP emissions in accordance with § 63.703(d)(2), the owner or operator shall establish as the site-specific operating parameter the minimum ventilation air flow rate through the inlet duct to the baghouse or fabric filter that ensures that particulate HAP are being captured and delivered to the control device. The minimum ventilation air flow rate is to be supported by the engineering calculations that are considered part of the initial performance test, as required by § 63.705(g)(2).

(8) Owners or operators subject to § 63.704(b)(1), (2), (3), (4), (5), (6), or (7) shall calculate the site-specific operating parameter value, or range of values, as the arithmetic average of the maximum and/or minimum operating parameter values, as appropriate, that demonstrate compliance with § 63.703(c), (d), (e), (f) or (i) during the multiple test runs required by § 63.705(b)(2) and (b)(1), or during the multiple runs of other tests conducted as allowed by paragraph § 63.704(b)(11).

(9) For each solvent recovery device used to comply with § 63.703(c), in lieu of meeting the requirements of paragraph (b)(1) of this section, the results of the material balance calculation conducted in accordance with § 63.705(c)(1) may serve as the site-specific operating parameter that demonstrates compliance with § 63.703(c).

(10) Owners or operators complying with the provisions of § 63.703(g) shall establish the site-specific operating parameter according to paragraph (b)(10)(i) or (ii) of this section.

(i) Owners or operators using a steam stripper shall establish the steam-to-feed ratio as the site-specific operating parameter, except as allowed in paragraph (b)(10)(ii) of this section, according to the following criteria:

(A) The minimum operating parameter value shall correspond to at least the fraction removed specified in § 63.703(g)(1)(i) and be submitted to the permitting authority for approval with the design specifications required by § 63.705(h)(1); or

(B) The minimum operating parameter value shall be that value that corresponds to a total VOHAP outlet concentration in the wastewater of less than 50 ppmw as determined through tests conducted in accordance with § 63.705(b)(9) and (h)(2); or

(C) The minimum operating parameter value shall be the value that corresponds to at least the fraction removed specified in § 63.705(g)(1)(i), as demonstrated through tests conducted in accordance with § 63.705(b)(9) and (h)(3).

(ii) Owners or operators complying with § 63.703(g) through the use of a steam stripper or any other control technique may establish as a site-specific operating parameter the outlet total VOHAP concentration according to the following criteria:

(A) The minimum operating parameter value shall correspond to at least the fraction removed specified in § 63.703(g)(1)(i) and be submitted to the permitting authority for approval with the design specifications required by § 63.705(h)(1); or

(B) The minimum operating parameter value shall be a total VOHAP outlet concentration in the wastewater of less than 50 ppmw, as required by § 63.703(g)(1)(ii), and as determined through tests conducted in accordance with § 63.705(b)(9) and (h)(2); or

(C) The minimum operating parameter value shall be the value that corresponds to at least the fraction removed specified in § 63.705(g)(1)(i), as demonstrated through tests conducted

in accordance with § 63.705(b)(9) and (h)(3).

(11) *Compliance provisions for nonrepresentative operating conditions.* (i) The owner or operator of an affected source may conduct multiple performance tests to establish the operating parameter value, or range of values, that demonstrates compliance with the standards in § 63.703 during various operating conditions.

(ii) To establish an alternate outlet concentration limit as provided in § 63.703(i), the owner or operator, when the coating operation is not occurring, shall conduct a performance test using the methods in § 63.705 for determining initial compliance with § 63.703(c)(1), (e)(1)(i) or (f)(1)(i), or shall collect data from continuous emission monitors used to determine continuous compliance as specified in § 63.704(b) and (c). During the period in which this limit is being established, the control device shall be operated in accordance with good air pollution control practices and in the same manner as it was operated to achieve the emission limitation for coating operations. Owners or operators choosing to establish such an alternative shall also comply with paragraphs (b)(11)(ii)(A) and (B) of this section.

(A) The owner or operator shall submit the alternate outlet HAP concentration limit within 180 days after the compliance demonstration required by § 63.7 of subpart A, to the Administrator, as required by § 63.707(k)(1).

(B) The Administrator will approve or disapprove the limit proposed in accordance with paragraph (b)(11)(ii)(A) of this section within 60 days of receipt of the report required by § 63.707(k)(1), and any other supplemental information requested by the Administrator to support the alternate limit.

(c) *Continuous compliance monitoring.* Following the date on which the initial compliance demonstration is completed, continuous compliance with the standards shall be demonstrated as outlined in paragraphs (c), (d), (e), or (f) of this section.

(1)(i) Each owner or operator of an affected source subject to § 63.703(c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or

(i) of this subpart shall monitor the applicable parameters specified in paragraphs (c)(3), (4), (5), (6), (7), or (9) of this section depending on the type of control technique used, and shall monitor the parameters specified in paragraph (c)(10) of this section.

(ii) Each owner or operator of an affected source subject to § 63.703(c)(5) of this subpart shall demonstrate continuous compliance as required by paragraph (c)(8) of this section.

(iii) Each owner or operator of an affected source subject to § 63.703(d)(2) of this subpart shall demonstrate continuous compliance as required by paragraph (e) of this section.

(iv) Each owner or operator of an affected source subject to § 63.703(g) of this subpart shall demonstrate continuous compliance as required by paragraph (d) of this section.

(2) Compliance monitoring shall be subject to the following provisions.

(i) Except as allowed by paragraph (c)(3)(i)(C) of this section, all continuous emission monitors shall comply with performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, as appropriate depending on whether volatile organic compound (VOC) or HAP concentration is being measured. The requirements in appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators must challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(ii) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications. The thermocouple calibration shall be verified or replaced every 3 months. The replacement shall be done either if the owner or operator chooses not to calibrate the thermocouple, or if the thermocouple cannot be properly calibrated.

(iii) If the effluent from multiple emission points are combined prior to being channeled to a common control device, the owner or operator is required only to monitor the common control device, not each emission point.

(3) Owners or operators complying with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i)

through the use of a control device and establishing a site-specific operating parameter in accordance with § 63.704(b)(1) shall fulfill the requirements of paragraphs (c)(3)(i) of this section and paragraph (c)(3)(ii), (iii), (iv), or (v) of this section, as appropriate.

(i) The owner or operator shall install, calibrate, operate, and maintain a continuous emission monitor.

(A) The continuous emission monitor shall be used to measure continuously the total HAP or VOC concentration at both the inlet and the outlet whenever HAP from magnetic tape manufacturing operations are vented to the control device, if continuous compliance is demonstrated through a percent efficiency calculation (§ 63.704(b)(1)(ii)); or

(B) The continuous emission monitor shall be used to measure continuously the total outlet HAP or VOC concentration whenever HAP from magnetic tape manufacturing operations are vented to the control device, if the provisions of § 63.704(b)(1)(i) are being used to determine continuous compliance.

(C) For owners or operators using a nonregenerative carbon adsorber, in lieu of using continuous emission monitors as specified in paragraph (c)(3)(i)(A) or (B) of this section, the owner or operator may use a portable monitoring device to monitor total HAP or VOC concentration at the inlet and outlet, or outlet of the carbon adsorber, as appropriate.

(1) The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications.

(2) The monitoring device shall meet the requirements of part 60, appendix A, method 21, sections 2, 3, 4.1, 4.2, and 4.4. For the purposes of paragraph (c)(3)(i)(C) of this section, the words "leak definition" in method 21 shall be the outlet concentration determined in accordance with § 63.704(b)(1). The calibration gas shall either be representative of the compounds to be measured or shall be methane, and shall be at a concentration associated with 125 percent of the expected organic compound concentration level for the carbon adsorber outlet vent.

(3) The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement.

(ii) If complying with § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of a carbon adsorption system with a common exhaust stack for all of the carbon vessels, the owner or operator shall not operate the control device at an average control efficiency less than that required by § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i) or at an average outlet concentration exceeding the site-specific operating parameter value or that required by § 63.703(i), for three consecutive adsorption cycles. Operation in this manner shall constitute a violation of § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(iii) If complying with § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of a carbon adsorption system with individual exhaust stacks for each of the multiple carbon adsorber vessels, the owner or operator shall not operate any carbon adsorber vessel at an average control efficiency less than that required by § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i), or at an average outlet concentration exceeding the site-specific operating parameter value or that required by § 63.703(i), as calculated daily using a 3-day rolling average. Operation in this manner shall constitute a violation of § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(iv) If complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of any control device other than a carbon adsorber, the owner or operator shall not operate the control device at an average control efficiency less than that required by § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i), or at an average outlet concentration exceeding the site-specific operating parameter value or that required by § 63.703(c)(2) or (i), as calculated for any 3-hour period. Operation in this manner shall constitute a

violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(v) If complying with § 63.703(c)(1) through the use of a nonregenerative carbon adsorber, in lieu of the requirements of paragraphs (c)(3) (ii) or (iii) of this section, the owner or operator may:

(A) monitor the VOC or HAP concentration of the adsorber exhaust daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater; operation of the control device at a HAP or VOC concentration greater than that determined in accordance with § 63.704(b)(1)(iii) shall constitute a violation of § 63.703 (c)(1), (e)(1)(i), or (f)(1)(i); or

(B) replace the carbon in the carbon adsorber system with fresh carbon at a regular predetermined time interval as determined in accordance with § 63.704(b)(5); failure to replace the carbon at this predetermined time interval shall constitute a violation of § 63.703 (c)(1), (e)(1)(i), or (f)(1)(i).

(4) Owners or operators complying with § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) through the use of a condenser as the add-on air pollution control device, and demonstrating compliance in accordance with § 63.704(b)(2), shall install, calibrate, operate, and maintain a thermocouple to measure continuously the temperature of the condenser vapor exhaust stream whenever HAP from magnetic tape manufacturing operations are vented to the control device. Operation of the control device at an average vapor exhaust temperature greater than the site-specific operating parameter value or values established in accordance with § 63.704(b)(2) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i) or (i).

(5) Owners or operators complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i) through the use of a thermal incinerator and demonstrating compliance in accordance with § 63.704(b)(3) shall install, calibrate, operate, and maintain a thermocouple to measure continuously the combustion temperature whenever HAP from magnetic tape manufacturing operations

are vented to the control device. Operation of the control device at an average combustion temperature less than the operating parameter value or values established in accordance with § 63.704(b)(3) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i).

(6) Owners or operators complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i) through the use of a catalytic incinerator and demonstrating compliance in accordance with § 63.704(b)(4) shall install, calibrate, operate, and maintain a thermocouple to measure continuously the gas temperature both upstream and downstream of the catalyst bed whenever HAP from magnetic tape manufacturing operations are vented to the control device. Operation of the control device at an average upstream gas temperature, or at an average gas temperature difference across the catalyst bed, less than the operating parameter values established in accordance with § 63.704(b)(4) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), or (f)(1)(i).

(7) Owners or operators complying with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) by capturing emissions through a room, enclosure, or hood shall install, calibrate, operate, and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with § 63.704(b)(6) whenever HAP from magnetic tape manufacturing operations are vented through the capture device. Operation of the capture device at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with § 63.704(b)(6) for any 3-hour period shall constitute a violation of § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i).

(8) The owner or operator of an affected source complying with § 63.703(c)(5) shall demonstrate continuous compliance by using a coating that has a HAP content of no greater than 0.18 kilograms of HAP per liter of coating solids, as measured in accordance with § 63.705(c)(5), and by maintaining and reporting the records required by §§ 63.706(f) and 63.707(e) and (i)(2).

(9) For owners or operators complying with § 63.703 (c)(1), (c)(3), or (c)(4) through the use of a solvent recovery device and demonstrating initial compliance in accordance with the provisions of § 63.705(c)(1), continuous compliance shall be demonstrated using procedures in § 63.705(c)(1) and through the recordkeeping and reporting requirements of §§ 63.706(d), 63.707(d), and 63.707(i)(5). The provisions of § 63.8(b) (2) and (3), (c), (d), (e), (f), and (g) (1), and (2) of subpart A do not apply.

(10) The owner or operator of an affected emission point using a vent system that contains bypass lines (not including equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes) that could potentially divert a vent stream away from the control device used to comply with § 63.703 (c)(1), (c)(2), (c)(3), (c)(4), (e)(1)(i), (f)(1)(i), or (i) shall:

(i) Install, calibrate, maintain, and operate a flow indicator that provides a record of vent stream flow at least once every 15 minutes; records shall be generated as specified in § 63.706(c)(1); and the flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(ii) Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration; a visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line; or

(iii) Ensure that any bypass line valve is in the closed position through continuous monitoring of valve position; the monitoring system shall be inspected at least once every month to ensure that it is functioning properly; or

(iv) Use an automatic shutdown system in which any HAP-emitting operations are ceased when flow from these operations is diverted away from the control device to any bypass line; the automatic system shall be inspected at least once every month to ensure that it is functioning properly.

(d) Owners or operators complying with § 63.703(g) shall demonstrate continuous compliance in accordance with paragraph (d)(1) or (d)(2) of this section.

(1) An owner or operator that established the steam-to-feed ratio as the site-specific operating parameter in accordance with § 63.704(b)(10)(i) shall continuously measure the steam-to-feed ratio whenever HAP-containing wastewater from magnetic tape manufacturing operations is being fed to the steam stripper. Operation of the steam stripper at a steam-to-feed ratio less than the operating parameter value or values established in accordance with § 63.704(b)(10)(i) for any 3-hour period shall constitute a violation of § 63.703(g).

(2) An owner or operator that established the total outlet VOHAP concentration of the wastewater discharge as the site-specific operating parameter in accordance with § 63.704(b)(10)(ii) shall measure the total VOHAP concentration of the wastewater discharge once per month. Operation of the control device at an outlet VOHAP concentration greater than the operating parameter value or values established in accordance with § 63.704(b)(10)(ii) for any month shall constitute a violation of § 63.703(g).

(e) Owners or operators complying with § 63.703(d)(2) of this subpart through the use of a baghouse or fabric filter shall perform visible emission testing each day that particulate HAP transfer occurs, using the procedures in § 63.705(b)(10). Owners or operators shall also install, calibrate, and operate the instrumentation necessary to continuously monitor the ventilation air flow rate in the inlet duct to the baghouse or fabric filter whenever particulate HAP transfer occurs. The occurrence of visible emissions shall constitute a violation of § 63.703(d)(2), and the operation of the baghouse or fabric filter at a flow rate less than the value or values established in accordance with § 63.704(b)(7) for any 3-hour period shall constitute a violation of § 63.703(d)(2).

(f) An owner or operator who uses an air pollution control device not listed in § 63.704 to comply with § 63.703(c), (e)(1)(i), (f)(1)(i), or (i), or a device other than a steam stripper to comply

with § 63.703(g) shall submit to the Administrator a description of the device, test data verifying the performance of the device, and appropriate site-specific operating parameters that will be monitored to demonstrate continuous compliance with the standard. The monitoring plan submitted by an owner or operator in accordance with this paragraph is subject to approval by the Administrator.

§ 63.705 Performance test methods and procedures to determine initial compliance.

(a) Except as specified in § 63.705(a) (1) through (3), to determine initial compliance with the emission limits under § 63.703 (c), (d)(2), (e)(1), (f)(1), and (g), the owner or operator shall conduct an initial performance demonstration as required under § 63.7 using the procedures and test methods listed in § 63.7 and § 63.705. If multiple emission points are vented to one common control device to meet the requirements of § 63.703 (c), (d)(2), (e)(1), and (f)(1), only one performance test is required to demonstrate initial compliance for that group of emission points. This section also contains initial compliance demonstration procedures (other than testing) for owners or operators subject to § 63.703 (c), (d)(1), (e)(1)(ii), (f)(1)(ii), and (g).

(1) A control device (not enclosure) used to comply with § 63.703 (c), (e), or (f) does not need to be tested if each of the following criteria are met:

(i) It is used to control gaseous HAP emissions from an existing affected source;

(ii) It is operating prior to March 11, 1994;

(iii) It is equipped with continuous emission monitors for determining inlet and outlet total HAP or VOC concentration, such that a percent efficiency can be calculated; and

(iv) The continuous emission monitors are used to demonstrate continuous compliance in accordance with § 63.704(c)(3)(i).

(2) The owner or operator is not required to conduct an initial performance test if the requirements of § 63.7(e)(2)(iv) or § 63.7(h) are met.

(3) An owner or operator is not required to conduct an initial performance test for a capture device when:

(i) The room, enclosure, or vent was previously tested to demonstrate compliance with subpart SSS of part 60; and

(ii) Sufficient data were gathered during the test to establish operating parameter values in accordance with § 63.704(b)(6) (i), (ii), and (iii).

(b) When an initial compliance demonstration is required by this subpart, the procedures in paragraphs (b)(1) through (b)(10) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) EPA Method 24 of appendix A of part 60 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that plant coating formulation data are equivalent to EPA Method 24 results, formulation data may be used. In the event of any inconsistency between an EPA Method 24 test and an affected source's formulation data, the EPA Method 24 test will govern. For EPA Method 24, the coating sample must be a 1-liter sample taken into a 1-liter container at a location and time such that the sample will be representative of the coating applied to the base substrate (i.e., the sample shall include any dilution solvent or other VOC added during the manufacturing process). The container must be tightly sealed immediately after the sample is taken. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use EPA Method 24 results.

(2) Formulation data is used to determine the HAP content of coatings.

(3) Either EPA Method 18 or EPA Method 25A of appendix A of part 60, as appropriate to the conditions at the site, shall be used to determine HAP or VOC concentration of air exhaust streams as required by § 63.705(c). The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 63.7(b). Method selection shall be based on consideration of the diversity of organic species present and

their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (b)(3) (i) and (ii) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(i) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.705(c) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(ii) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.705(c) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(4) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(5) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(6) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(7) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(8) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(9) Wastewater analysis shall be conducted in accordance with paragraph (b)(9)(i) or (b)(9)(ii) of this section.

(i) Use Method 305 of 40 CFR part 63, appendix A and the equations in paragraphs (b)(9)(i) (A) and (B) of this section to determine the total VOHAP concentration of a wastewater stream.

(A) The following equation shall be used to calculate the VOHAP concentration of an individually speciated HAP.

$$C_i = \left(C_c * \frac{MW}{24.055} * \frac{P_i}{760} * \frac{293}{T_i} * t * L * 10^3 \right) / M_s$$

where:

C_i = VOHAP concentration of the individually-specified organic HAP in the wastewater, parts per million by weight.

C_c = Concentration of the organic HAP (i) in the gas stream, as measured by Method 305 of appendix A of this part, parts per million by volume on a dry basis.

M_s = Mass of sample, from Method 305 of appendix A of this part, milligrams.

MW = Molecular weight of the organic HAP (i), grams per gram-mole.

24.055 = Ideal gas molar volume at 293° Kelvin and 760 millimeters of mercury, liters per gram-mole.

P_i = Barometric pressure at the time of sample analysis, millimeters mercury absolute.

760 = Reference or standard pressure, millimeters mercury absolute.

293 = Reference or standard temperature, °Kelvin.

T_i = Sample gas temperature at the time of sample analysis, °Kelvin.

t = Actual purge time, from Method 305 of appendix A of this part, minutes.

L = Actual purge rate, from Method 305 of appendix A of this part, liters per minute.

10^3 = Conversion factor, milligrams per gram.

(B) Total VOHAP concentration (stream) can be determined by summing the VOHAP concentrations of all individually specified organic HAP in the wastewater.

$$C_{\text{stream}} = \sum_{i=1}^n C_i$$

where:

C_{stream} = Total VOHAP concentration of wastewater stream.

n = Number of individual organic HAP (i) in the wastewater stream.

C_i = VOHAP concentration of individual organic HAP (i) calculated according to the procedures in paragraph (b)(9)(i)(A) of this section.

(ii) Use a test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated according to section 5.1 or 5.3 of Method 301 of appendix A of this part. The specific requirement of Method 305 of appendix A of this part to collect the sample into polyethylene glycol would not be applicable.

(A) If measuring the total VOHAP concentration of the exit stream in accordance with §§ 63.703(g)(1)(ii) and 63.705(h)(2), the concentrations of the individual organic HAP measured in the water shall be corrected to their concentrations had they been measured by Method 305 of appendix A of this part. This is done by multiplying each concentration by the compound-specific fraction measured factor (F_M) listed in table 34 of 40 CFR part 63, subpart G.

(B) If measuring the total HAP concentration of an inlet and outlet wastewater stream to demonstrate compliance with § 63.703(g)(1)(i) and following the procedures of § 63.705(h)(3), the concentrations of the individual organic HAP measured in the water do not need to be corrected.

(10) EPA Method 22 of appendix A of part 60 is used to determine visible emissions. Visible emissions testing shall be conducted for a minimum of 6 minutes during a time when particulate HAP transfer, as defined in this subpart, is occurring.

(c) *Initial compliance demonstrations.* Except as stipulated in § 63.705(a), each owner or operator subject to the requirements of § 63.703(c) must demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraphs (c)(1), (2), (3), (4), (5), or (6) and paragraph (d) of this section, as applicable. Each owner or operator subject to § 63.703(d), (e), (f), and (g) must demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraphs (e), (f), (g), and (h) of this section, as appropriate.

(1) To demonstrate initial and continuous compliance with § 63.703(c)(1), (c)(3), or (c)(4) when emissions from only the affected coating operations are controlled by a dedicated solvent recovery device, each owner or operator of the affected coating operation may perform a liquid-liquid HAP or VOC material balance over rolling 7-day periods in lieu of demonstrating compliance through the methods in paragraphs (c)(2), (c)(3), or (c)(4) of this section. Results of the material balances calculation performed to demonstrate initial compliance shall be submitted to the Administrator with the notification of compliance status required by § 63.9(h) and § 63.707(d). When demonstrating compliance by this procedure, § 63.7(e)(3) of subpart A does not apply. The amount of liquid HAP or VOC applied and recovered shall be determined as discussed in paragraph (c)(1)(iii) of this section. The overall HAP or VOC emission reduction (R) is calculated using equation 1:

$$R = \frac{M_r}{\sum_{i=1}^n [W_{oi} M_{ci} - RS_i]} \times 100 \quad (\text{Eq. 1})$$

(i) The value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured RS_i value that is greater than zero:

- (A) Measurement techniques; and
 - (B) Documentation that the measured value of RS_i exceeds zero.
- (ii) The measurement techniques of paragraph (c)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of performance test required under § 63.7(b).
- (iii) Each owner or operator demonstrating compliance by the test method described in paragraph (c)(1) of this section shall:
- (A) Measure the amount of coating applied at the coater;
 - (B) Determine the VOC or HAP content of all coating applied using the test method specified in § 63.705(b) (1) or (2);
 - (C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indi-

cates the amount of HAP or VOC recovered by the solvent recovery device over rolling 7-day periods; the device shall be certified by the manufacturer to be accurate to within ± 2.0 percent, and this certification shall be kept on record;

(D) Measure the amount of HAP or VOC recovered; and

(E) Calculate the overall HAP or VOC emission reduction (R) for rolling 7-day periods using Equation 1.

(iv) Compliance is demonstrated if the value of R is equal to or greater than the overall HAP control efficiency required by § 63.703 (c)(1), (c)(3), or (c)(4).

(2) To demonstrate initial compliance with § 63.703 (c)(1), (c)(2), (c)(3), or (c)(4) when affected HAP emission points are controlled by an emission control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures.

(i) Construct the overall HAP emission reduction system so that all volumetric flow rates and total HAP or VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 63.705(b) (3) through (8).

(ii) Determine capture efficiency from the HAP emission points by capturing, venting, and measuring all HAP emissions from the HAP emission points. During a performance test, the owner or operator of affected HAP emission points located in an area with other gaseous emission sources not affected by this subpart shall isolate the affected HAP emission points from all other gaseous emission points by one of the following methods:

(A) Build a temporary total enclosure (see § 63.702) around the affected HAP emission point(s); or

(B) Shut down all gaseous emission points not affected by this subpart and continue to exhaust fugitive emissions from the affected HAP emission points through any building ventilation system and other room exhausts such as drying ovens.

All ventilation air must be vented through stacks suitable for testing.

(iii) Operate the emission control device with all affected HAP emission points connected and operating.

(iv) Determine the efficiency (E) of the control device using equation 2:

$$E = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^p Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}} \quad (\text{Eq. 2})$$

(v) Determine the efficiency (F) of the capture system using equation 3:

$$F = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^p Q_{fk} C_{fk}} \quad (\text{Eq. 3})$$

(vi) For each HAP emission point subject to § 63.703, compliance is demonstrated if either of the following conditions are met:

(A) The product of (E)×(F) is equal to or greater than the overall HAP control efficiency required by § 63.703(c)(1), (c)(3), or (c)(4); or

(B) When the owner or operator is subject to § 63.703(c)(2), the value of F is equal to 1 and the value of C_{aj} at the outlet of the incinerator is demonstrated to be no greater than 20 ppmv by compound, on a dry basis.

(3) To demonstrate compliance with § 63.703(c)(1), (c)(3), or (c)(4) when affected HAP emission points are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures:

(i) Construct the overall HAP emission reduction system so that each volumetric flow rate and the total HAP emissions can be accurately determined by the applicable test methods and procedures specified in § 63.705(b)(3) through (8);

(ii) Assure that all HAP emissions from the affected HAP emission point(s) are segregated from gaseous emission points not affected by this subpart and that the emissions can be

captured for measurement, as described in § 63.705(c)(2)(ii) (A) and (B);

(iii) Operate the emission control device with all affected HAP emission points connected and operating;

(iv) Determine the efficiency (H_v) of each individual carbon adsorber vessel (v) using equation 4:

$$H_v = \frac{Q_{gv} C_{gv} - Q_{hv} C_{hv}}{Q_{gv} C_{gv}} \quad (\text{Eq. 4})$$

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the individual carbon adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual carbon adsorber vessel (v) using equation 5:

$$H_{sys} = \frac{\sum_{v=1}^q H_v Q_{hv}}{\sum_{v=1}^q Q_{hv}} \quad (\text{Eq. 5})$$

(vi) Determine the efficiency (F) of the capture system using equation (3).

(vii) For each HAP emission point subject to § 63.703(c), compliance is demonstrated if the product of (H_{sys})×(F) is equal to or greater than the overall HAP control efficiency required by § 63.703(c)(1), (c)(3), or (c)(4).

(4) An alternative method of demonstrating compliance with § 63.703(c)(1) through (c)(4) is the installation of a total enclosure around the affected HAP emission point(s) and the ventilation of all HAP emissions from the total enclosure to a control device with the efficiency or outlet concentration specified in paragraph (c)(4)(iii) of this section. If this method is selected, the compliance test methods described in paragraphs (c)(1), (c)(2), and (c)(3) of this section are not required. Instead, each owner or operator of an affected source shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (c)(4)(i) (A) through (D) of this section shall be considered a total enclosure. The owner or operator of an enclosure that does not meet these requirements

may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected HAP emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) Total area of all natural draft openings shall not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of

four equivalent diameters away from each natural draft opening;

(C) Average inward face velocity (FV) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(1) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in § 63.705(b) (4) and (5); volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(2) Determine FV by equation 6:

$$FV = \frac{\sum_{j=1}^n Q_{out\ j} - \sum_{i=1}^p Q_{in\ i}}{\sum_{k=1}^q A_k} \quad (\text{Eq. 6})$$

(D) The air passing through all natural draft openings shall flow into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using equation (2) or equations (4) and (5), as applicable, and the test methods and procedures specified in § 63.705(b) (3) through (8).

(iii) Be in compliance if either of the following criteria are met:

(A) The installation of a total enclosure is demonstrated and the value of E determined from equation (2) (or the value of H_{sys} determined from equations (4) and (5), as applicable) is equal to or greater than the overall HAP control

efficiency required by § 63.703 (c)(1), (c)(3), or (c)(4); or

(B) When the owner or operator is subject to § 63.703(c)(2), the installation of a total enclosure is demonstrated and the value of C_{aj} at the outlet of the incinerator is demonstrated to be no greater than 20 ppmv by compound, on a dry basis.

(5) To demonstrate initial and continuous compliance with § 63.703(c)(5), each owner or operator of an affected source shall determine the mass of HAP contained in the coating per volume of coating solids applied for each batch of coating applied, according to the procedures of paragraphs (c)(5) (i) through (iii) of this section. If a batch of coating is identical to a previous batch of coating applied, the original calculations can be used to demonstrate the compliance of subsequent identical batches. The calculation of the HAP content of the coating used to demonstrate initial compliance with § 63.703(c)(5) shall be submitted to the Administrator with the notification of compliance status required by § 63.9(h) and § 63.707(e). When demonstrating

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compliance by this procedure, § 63.7(e)(3) of subpart A does not apply.

(i) Determine the weight fraction of HAP in each coating applied using formulation data as specified in § 63.705(b)(2);

(ii) Determine the volume of coating solids in each coating applied from the facility records; and

(iii) Compute the mass of HAP per volume of coating solids by equation 7:

$$G = \frac{W_{oi} M_{ci}}{L_{si} V_{ci}} \quad (\text{Eq. 7})$$

(iv) The owner or operator of an affected source is in compliance with § 63.703(c)(5) if the value of G is less than or equal to 0.18 kilogram of HAP per liter of coating solids applied.

(6) When nonregenerative carbon adsorbers are used to comply with § 63.703(c)(1), the owner or operator may conduct a design evaluation to demonstrate initial compliance in lieu of following the compliance test procedures of paragraph (c) (1), (2), (3), or (4) of this section. The design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and the emission point operating schedule.

(d)(1) To demonstrate initial compliance with § 63.703(c) when hard piping or ductwork is used to direct HAP emissions from a HAP source to the control device, each owner or operator shall demonstrate upon inspection that the criteria of paragraph (d)(1)(i) and paragraph (d)(1) (ii) or (iii) are met.

(i) The equipment must be vented to a control device.

(ii) The control device efficiency (E or H_{sys}, as applicable) determined using equation (2) or equations (4) and (5), respectively, and the test methods and procedures specified in § 63.705(b) (3) through (8), must be equal to or greater than the overall HAP control efficiency required by § 63.703 (c)(1), (c)(3), or (c)(4), or the outlet concentration must be no greater than 20 ppmv by com-

pound, on a dry basis, as required by § 63.703(c)(2).

(iii) When a nonregenerative carbon adsorber is used, the ductwork from the affected emission point(s) must be vented to the control device and the carbon adsorber must be demonstrated, through the procedures of § 63.705(c) (1), (2), (3), (4), or (6) to meet the requirements of § 63.703(c)(1).

(2) To demonstrate initial compliance with provisions for mix preparation equipment, owners or operators shall, in addition to paragraph (d)(1) of this section, ensure that covers are closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with the cover in place. Such activities shall be carried out through ports of the minimum practical size.

(e) To demonstrate initial compliance with § 63.703(e), the owner or operator of a wash sink subject to the provisions of this standard shall:

(1) If complying with § 63.703(e)(1)(ii), maintain at least the required minimum freeboard ratio at all times; or

(2) If complying with § 63.703(e)(1)(i), the owner or operator of an existing wash sink that vents emissions from the wash sink to a control device prior to March 11, 1994 must demonstrate that the control device is at least 95-percent efficient in accordance with § 63.705(c) (2), (3), (4), or (6); or

(3) If complying with § 63.703(e)(1)(i), each owner or operator that vents emissions from the wash sink, through a capture device, and to a control device starting on or after March 11, 1994, must demonstrate that the overall HAP control efficiency is at least 88

percent using the test methods and procedures in § 63.705(c) (2), (3), (4), or (6).

(f) To demonstrate initial compliance with § 63.703(f), the owner or operator shall:

(1) If complying with § 63.703(f)(1)(ii), install and use a closed system for flushing fixed lines; or

(2) If complying with § 63.703(f)(1)(i), each owner or operator that vents emissions from the flushing operation, through a capture device, and to a control device must demonstrate that the overall HAP control efficiency is at least 95 percent using the test methods and procedures in § 63.705(c) (2), (3), (4), or (6).

(g) To demonstrate initial compliance with § 63.703(d), the owner or operator shall:

(1) If complying with § 63.703(d)(1), install an enclosed transfer device for conveying particulate HAP, and use this device, following manufacturer's specifications or other written procedures developed for the device; or

(2) If complying with § 63.703(d)(2):

(i) Test the baghouse or fabric filter to demonstrate that there are no visible emissions using the test method in § 63.705(b)(10); and

(ii) provide engineering calculations in accordance with § 63.707(h) of this subpart with the performance test results required by § 63.7(g)(1) and § 63.9(h) of subpart A, to demonstrate that the ventilation rate from the particulate transfer activity to the control device is sufficient for capturing the particulate HAP.

(h) To demonstrate initial compliance with § 63.703(g), the owner or operator of an affected source shall follow the compliance procedures of either paragraph (h)(1), paragraph (h)(2), or paragraph (h)(3) of this section.

(1) The owner or operator shall submit to the permitting authority with the notification of compliance status required by § 63.9(h) and § 63.707(f) the design specifications demonstrating that the control technique meets the required efficiency for each HAP compound. For steam strippers, these specifications shall include at a minimum: feed rate, steam rate, number of theoretical trays, number of actual trays, feed composition, bottoms composi-

tion, overheads composition, and inlet feed temperature.

(2) The owner or operator shall demonstrate the compliance of a treatment process with the parts per million by weight (ppmw) wastewater stream concentration limits specified in § 63.703(g)(1)(ii) by measuring the concentration of total VOHAP at the outlet of the treatment process using the method specified in § 63.705(b)(9) (i) or (ii). A minimum of three representative samples of the wastewater stream exiting the treatment process, which are representative of normal flow and concentration conditions, shall be collected and analyzed. Wastewater samples shall be collected using the sampling procedures specified in Method 25D of appendix A of part 60. Where feasible, samples shall be taken from an enclosed pipe prior to the wastewater being exposed to the atmosphere. When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner that minimizes exposure of the sample to the atmosphere and loss of organic HAP prior to analysis.

(3) The owner or operator shall demonstrate the compliance of a treatment process with the HAP fraction removed requirement specified in § 63.703(g)(1)(i) by measuring the concentration of each HAP at the inlet and outlet of the treatment process using the method specified in § 63.705(b)(9) (i) or (ii) and the procedures of paragraphs (h)(3) (i) through (iii) of this section.

(i) The same test method shall be used to analyze the wastewater samples from both the inlet and outlet of the treatment process.

(ii) The HAP mass flow rate of each individually speciated HAP compound entering the treatment process (E_e) and exiting the treatment process (E_a) shall be determined by computing the product of the flow rate of the wastewater stream entering or exiting the treatment process, and the HAP concentration of each individual HAP compound of the entering or exiting wastewater streams, respectively.

(A) The flow rate of the entering and exiting wastewater streams shall be determined using inlet and outlet flow meters, respectively.

(B) The average HAP concentration of each individual HAP of the entering and exiting wastewater streams shall be determined according to the procedures specified in either paragraph (b)(9)(i)(A) or (b)(9)(ii)(B) of this section. If measuring the VOHAP concentration of an individual HAP in accordance with § 63.705(b)(9)(i)(A), the concentrations of the individual organic VOHAP measured in the water shall be corrected to a HAP concentration by dividing each VOHAP concentration by the compound-specific fraction measured factor (F_M) listed in table 34 of 40 CFR part 63, subpart G.

(C) Three grab samples of the entering wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs.

(D) Three grab samples of the exiting wastewater stream shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of three runs conducted over the same 3-hour period at which the total HAP mass flow rate entering the treatment process is determined.

(E) The HAP mass flow rates of each individual HAP compound entering and exiting the treatment process are calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left(\sum_{p=1}^n V_{bp} C_{bp} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left(\sum_{p=1}^n V_{ap} C_{ap} \right)$$

where:

E_b = HAP mass flow rate of an individually speciated HAP compound entering the treatment process, kilograms per hour.

E_a = HAP mass flow rate of an individually speciated HAP compound exiting the treatment process, kilograms per hour.

K = Density of the wastewater stream, kilograms per cubic meter.

V_{bp} = Average volumetric flow rate of wastewater entering the treatment process during each run p , cubic meters per hour.

V_{ap} = Average volumetric flow rate of wastewater exiting the treatment process during each run p , cubic meters per hour.

C_{bp} = Average HAP concentration of an individually speciated HAP in the wastewater stream entering the treatment process during each run p , parts per million by weight.

C_{ap} = Average HAP concentration of an individually speciated HAP in the wastewater stream exiting the treatment process during each run p , parts per million by weight.

n = Number of runs.

(iii) The fraction removed across the treatment process for each individually speciated HAP compound shall be calculated as follows:

$$F_R = \frac{E_b - E_a}{E_b}$$

where:

F_R = Fraction removed for an individually speciated HAP compound of the treatment process.

E_b = HAP mass flow rate of an individually speciated HAP compound entering the treatment process, kilograms per hour.

E_a = HAP mass flow rate of an individually speciated HAP compound exiting the treatment process, kilograms per hour.

(i) Startups and shutdowns are normal operation for this source category. Emissions from these activities are to be included when determining if the standards specified in § 63.703 are being attained.

(j) An owner or operator who uses compliance techniques other than those specified in this subpart shall submit a description of those compliance procedures, subject to the Administrator's approval, in accordance with § 63.7(f) of subpart A.

§ 63.706 Recordkeeping requirements.

(a) Except as stipulated in § 63.703 (b), (c)(5), and (h), the owner or operator of

a magnetic tape manufacturing operation subject to this subpart shall fulfill all applicable recordkeeping requirements in § 63.10 of subpart A, as outlined in Table 1.

(b) The owner or operator of an affected source subject to this subpart that is also subject to the requirements of § 63.703(e)(1)(ii) (a minimum freeboard ratio of 75 percent), shall record whether or not the minimum freeboard ratio has been achieved every time that HAP solvent is added to the wash sink. A measurement of the actual ratio is not necessary for each record as long as the owner or operator has a reliable method for making the required determination. For example, the record may be made by comparing the HAP solvent level to a permanent mark on the sink that corresponds to a 75 percent freeboard ratio. A HAP solvent level in the sink higher than the mark would indicate the minimum ratio has not been achieved.

(c) The owner or operator of an affected source subject to this subpart that is subject to the requirements of § 63.704(c)(10) shall:

(1) If complying with § 63.704(c)(10)(i), maintain hourly records of whether the flow indicator was operating and whether flow was detected at any time during the hour, as well as records of the times and durations of all periods when the vent stream is diverted from the control device or the monitor is not operating;

(2) If complying with § 63.704(c)(10)(ii), (iii), or (iv), maintain a record of monthly inspections, and the records of the times and durations of all periods when:

(i) Flow was diverted through any bypass line such that the seal mechanism was broken;

(ii) The key for a lock-and-key type lock had been checked out;

(iii) The valve position on any bypass line changed to the open position; or

(iv) The diversion of flow through any bypass line caused a shutdown of HAP-emitting operations.

(d) The owner or operator of an affected source that is complying with § 63.703(c) by performing a material balance in accordance with § 63.705(c)(1) shall:

(1) Maintain a record of each 7-day rolling average calculation; and

(2) Maintain a record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered.

(e) The owner or operator of a magnetic tape manufacturing operation subject to the provisions of § 63.703 (b) and (h) shall maintain records of the calculations used to determine the limits on the amount of HAP utilized as specified in § 63.703(b)(2), and of the HAP utilized in each month and the sum over each 12-month period.

(f) The owner or operator of an affected source subject to the provisions of § 63.703(c)(5) shall keep records of the HAP content of each batch of coating applied as calculated according to § 63.705(c)(5), and records of the formulation data that support the calculations. When a batch of coating applied is identical to a previous batch applied, only one set of records is required to be kept.

(g) The owner or operator of an affected source that is complying with § 63.703(c)(1) through the use of a non-regenerative carbon adsorber and demonstrating initial compliance in accordance with § 63.705(c)(6) shall maintain records to support the outlet VOC or HAP concentration value or the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(h) In accordance with § 63.10(b)(1) of subpart A, the owner or operator of an affected source subject to the provisions of this subpart shall retain all records required by this subpart and subpart A for at least 5 years following their collection.

§ 63.707 Reporting requirements.

(a) Except as stipulated in § 63.703(b), (c)(5), and (h), the owner or operator of a magnetic tape manufacturing operation subject to this subpart shall fulfill all applicable reporting requirements in § 63.7 through § 63.10, as outlined in Table 1 to this subpart. These reports shall be submitted to the Administrator or delegated State.

(b) The owner or operator of an existing magnetic tape manufacturing operation subject to § 63.703(b) and (h) shall include the values of the limits on the

amount of HAP utilized as determined in § 63.703(b)(2), along with supporting calculations, in the initial notification report required by § 63.9(b).

(c) The owner or operator of a new magnetic tape manufacturing operation subject to § 63.703(h) shall include the values of the limits on the amount of HAP utilized as determined in § 63.703(b)(2), along with supporting calculations, and the amount of HAP expected to be utilized during the first consecutive 12-month period of operation in the initial notification report required by § 63.9(b).

(d) The owner or operator subject to § 63.703(c) and following the compliance provisions of § 63.705(c)(1) (material balance calculation) shall include with the notification of compliance status required by § 63.9(h) the results of the initial material balance calculation.

(e) The owner or operator subject to § 63.703(c)(5) and following the compliance provisions of § 63.705(c)(5) (low-HAP coating) shall include with the notification of compliance status required by § 63.9(h) the results of the initial low-HAP coating demonstration.

(f) The owner or operator subject to the provisions of § 63.703(g) and demonstrating compliance in accordance with § 63.705(h)(1) shall submit to the permitting authority with the notification of compliance status required by § 63.9(h) the design specifications demonstrating that the control technique meets the required efficiency. For steam strippers, these specifications shall include at a minimum: feed rate, steam rate, number of theoretical trays, number of actual trays, feed composition, bottoms composition, overheads composition, and inlet feed temperature.

(g) The owner or operator of an affected source that is complying with § 63.703(c)(1) through the use of a non-regenerative carbon adsorber and demonstrating initial compliance in accordance with § 63.705(c)(6) shall submit to the permitting authority with the notification of compliance status required by § 63.9(h) the design evaluation.

(h) The owner or operator of an affected source that is complying with § 63.703(d) through the use of a baghouse or fabric filter and dem-

onstrating initial compliance in accordance with § 63.705(g)(2) shall submit to the permitting authority with the notification of compliance status required by § 63.9(h) the engineering calculations that support the minimum ventilation rate needed to capture HAP particulates for delivery to the control device.

(i) Excess emissions and continuous monitoring system performance report and summary reports shall be submitted as required by § 63.10(e).

(1) The owner or operator of an affected source subject to § 63.704 shall include deviations of monitored values from the operating parameter values required by § 63.704(c) in the reports. In the case of exceedances, the report must also contain a description and timing of the steps taken to address the cause of the exceedance.

(2) The owner or operator of an affected source subject to § 63.703(c)(5) shall report the HAP content of each batch of coating applied as the monitored operating parameter value in the reports.

(3) The owner or operator of an affected source subject to § 63.703(e)(1)(ii) and maintaining a minimum freeboard ratio of 75 percent shall report violations of the standard (freeboard ratio is less than 75 percent) in the reports.

(4) The owner or operator of an affected source subject to § 63.704(c)(10) of this subpart shall include records of any time period and duration of time that flow was diverted from the control device, as well as the results of monthly inspections required by § 63.704(c)(10)(ii), (iii), and (iv) in the reports.

(5) The owner or operator of an affected source complying with § 63.703(c) by performing a material balance calculation in accordance with § 63.705(c)(1) shall report any exceedances of the standard, as demonstrated through the calculation, in the reports.

(j) The owner or operator of a magnetic tape manufacturing operation subject to the provisions of § 63.703(h) shall report the amount of HAP utilized in each 12-month period in an annual report to the Administrator according to the following schedule:

Environmental Protection Agency

Pt. 63, Subpt. EE, Table 1

(1) For existing sources, the first report shall cover the 12-month period prior to the source's compliance date and shall be submitted to the Administrator no later than 30 days after the compliance date; and

(2) For new sources, the first report shall include the quantity of HAP that is expected to be utilized during the first 12 months of operation and shall be submitted to the Administrator no later than 30 days after the compliance date;

(3) Annual reports shall be submitted to the Administrator no later than 30 days after the last 12-month period included in the report; and

(4) A report shall also be submitted no later than 30 days after monthly records required to be maintained by §63.706(e) indicate that any limit on the amount of HAP utilized has been exceeded. The report shall indicate the amount by which the limit has been exceeded.

(k) The owner or operator establishing an alternate HAP outlet concentration limit in accordance with §§63.703(i) and 63.704(b)(11)(ii) shall:

(1) To support the proposed limit, submit the following within 180 days following completion of the performance test required by §63.7:

(i) The performance test or CEM data collected to establish the limit;

(ii) Records of when coating operations were down;

(iii) The rationale for the alternate proposed limit; and

(iv) A statement signed by a responsible official of the company that the control device was operated in accordance with good air pollution control practices and in the same manner it was operated to achieve compliance with the emission limitation for coating operations; and

(2) In the excess emissions and continuous monitoring system performance report and summary report required by §63.10(e)(3), include parameter or CEM data to demonstrate compliance or noncompliance with the alternate outlet HAP concentration established in accordance with §§63.703(i) and 63.704(b)(11)(ii) once the limit is approved.

§63.708 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(b) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: no restrictions.

TABLE 1 TO SUBPART EE—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART EE

Reference	Applies to subpart EE	Comment
63.1(a)(1)	Yes	Additional terms defined in §63.702(a); when overlap between subparts A and EE occurs, subpart EE takes precedence.
63.1(a)(2)–(14)	Yes.	
63.1(b)(1)–(3)	Yes.	
63.1(c)(1)	Yes	Subpart EE specifies the applicability of each paragraph in subpart A to sources subject to subpart EE.
63.1(c)(2)	No	
63.1(c)(4)–(5)	Yes.	
63.1(e)	Yes.	The applicability of §§63.701(a)(2) and 63.703 (b) and (h) to a source does not in and of itself make a source subject to part 70.
63.2	Yes	
63.3	Yes	
63.4(a)(1)–(3)	Yes.	Additional terms defined in §63.702(a); when overlap between subparts A and EE occurs, subpart EE takes precedence.
63.4(a)(5)	Yes.	
63.4(b)	Yes.	
63.4(c)	Yes.	
63.5(a)	Yes.	
63.5(b)(1)	Yes.	
63.5(b)(3)–(6)	Yes.	
63.5(d)	Yes.	
63.5(e)	Yes.	
63.5(f)	Yes.	
63.6(a)	Yes.	
63.6(b)(1)–(5)	Yes.	
63.6(b)(7)	Yes.	
63.6(b)(7)	Yes.	
63.6(b)(7)	Yes.	
63.6(b)(7)	Yes.	
63.6(b)(7)	Yes.	

TABLE 1 TO SUBPART EE—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART EE—Continued

Reference	Applies to subpart EE	Comment
63.6(c)(1)–(2)	Yes.	Owners or operators of affected sources subject to subpart EE do not need to address startups and shutdowns because the emission limitations apply during these times.
63.6(c)(5)	Yes.	
63.6(e)(1)–(2)	Yes.	
63.6(e)(3)	Yes	
63.6(f)(1)	No	§ 63.701(f) of subpart EE specifies when the standards apply.
63.6(f)(2)(i)–(ii)	Yes.	
63.6(f)(2)(iii)	Yes	§ 63.705(a)(3) of subpart EE includes additional circumstances under which previous capture device demonstrations are acceptable to show compliance.
63.6(f)(2)(iv)–(v)	Yes.	
63.6(f)(3)	Yes.	§ 63.701(f) of subpart EE specifies when the standards apply.
63.6(g)	Yes.	
63.6(h)(1)	No	
63.6(h)(2)(i)	Yes.	
63.6(h)(2)(iii)	Yes.	This requirement applies only for the visible emission test required under § 63.705(g)(2).
63.6(h)(4)	Yes	
63.6(h)(5)(i)–(iii)	Yes.	
63.6(h)(5)(v)	No.	
63.6(h)(6)	Yes.	§ 63.703(c)(4) of subpart EE shall not be considered emissions averaging for the purposes of § 63.6(i)(4)(i)(B).
63.6(h)(7)	No.	
63.6(h)(8)	Yes.	
63.6(h)(9)	No.	
63.6(i)(1)–(14)	Yes	§ 63.7(e) establishes the minimum performance test requirements. This section does not preclude owners or operators from conducting multiple test runs under alternate operating conditions to establish an appropriate range of compliance operating parameter values in accordance with § 63.704(b)(11)(i) of subpart EE. Also as required in § 63.701(f) of subpart EE, the emissions standards apply during startup and shutdown.
63.6(i)(16)	Yes.	
63.6(j)	Yes.	
63.7(a)(1)	Yes.	
63.7(a)(2)(i)–(vi)	Yes.	
63.7(a)(2)(ix)	Yes.	
63.7(a)(3)	Yes.	
63.7(b)	Yes.	
63.7(c)	Yes.	
63.7(d)	Yes.	
63.7(e)	Yes	
63.7(f)	Yes.	
63.7(g)(1)	Yes.	
63.7(g)(3)	Yes.	
63.7(h)	Yes.	§ 63.704 of subpart EE specifies monitoring locations; when multiple emission points are tied to one central control device, the monitors are located at the central control device.
63.8(a)(1)–(2)	Yes.	
63.8(a)(4)	Yes.	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	Provisions related to COMS, however, do not apply.
63.8(b)(3)	Yes.	
63.8(c)(1)–(3)	Yes.	
63.8(c)(4)	Yes	
63.8(c)(5)	No.	
63.8(c)(6)–(8)	Yes.	
63.8(d)	Yes.	
63.8(e)	Yes.	
63.8(f)(1)–(6)	Yes.	
63.8(g)(1)–(5)	Yes.	
63.9(a)	Yes.	
63.9(b)	Yes.	
63.9(c)	Yes.	
63.9(d)	Yes.	
63.9(e)	Yes.	
63.9(f)	Yes.	
63.9(g)(1)	Yes.	
63.9(g)(2)	No.	
63.9(g)(3)	Yes.	
63.9(h)(1)–(3)	Yes.	
63.9(h)(5)–(6)	Yes.	
63.9(i)	Yes.	
63.9(j)	Yes.	

TABLE 1 TO SUBPART EE—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART EE—Continued

Reference	Applies to subpart EE	Comment
63.10(a)	Yes.	
63.10(b)(1)	Yes.	
63.10(b)(2)	Yes	Except information on startup and shutdown periods is not necessary because the standards apply during these time periods.
63.10(b)(3)	Yes.	
63.10(c)(1)	Yes.	
63.10(c)(5)–(8)	Yes	Except information on startup and shutdown periods is not necessary because the standards apply during these times.
63.10(c)(10)–(15)	Yes	Except information on startup and shutdown periods is not necessary because the standards apply during these times.
63.10(d)(1)–(2)	Yes.	
63.10(d)(3)	Yes	This requirement applies only for the visible emissions test required under § 63.705(g)(2). The results of visible emissions tests under § 63.704(e) shall be reported as required in § 63.10(e)(3).
63.10(d)(4)	Yes.	
63.10(d)(5)	Yes	Except information on startup and shutdown periods is not necessary because the standards apply during these times.
63.10(e)(1)	Yes.	
63.10(e)(2)(i)	Yes.	
63.10(e)(2)(ii)	No.	
63.10(e)(3)(i)–(v)	Yes.	
63.10(e)(3)(vi)–(viii) ...	Yes	Except emissions/CMS performance during startup and shutdown do not need to be specified because the standards apply during startup and shutdown.
63.10(e)(4)	No.	
63.10(f)	Yes.	
63.11–63.15	Yes.	

Subpart FF [Reserved]**Subpart GG—National Emission Standards for Aerospace Manufacturing and Rework Facilities**

SOURCE: 60 FR 45956, Sept. 1, 1996, unless otherwise noted.

§ 63.741 Applicability and designation of affected sources.

(a) This subpart applies to facilities that are engaged, either in part or in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components and that are major sources as defined in § 63.2.

(b) The owner or operator of an affected source shall comply with the requirements of this subpart and of subpart A of this part, except as specified in § 63.743(a) and Table 1 of this subpart.

(c) *Affected sources.* The affected sources to which the provisions of this subpart apply are specified in paragraphs (c)(1) through (7) of this section. The activities subject to this subpart are limited to the manufacture or rework of aerospace vehicles or compo-

nents as defined in this subpart. Where a dispute arises relating to the applicability of this subpart to a specific activity, the owner or operator shall demonstrate whether or not the activity is regulated under this subpart.

(1) Each cleaning operation as follows:

(i) All hand-wipe cleaning operations constitute an affected source.

(ii) Each spray gun cleaning operation constitutes an affected source.

(iii) All flush cleaning operations constitute an affected source.

(2) For organic HAP or VOC emissions, each primer application operation, which is the total of all primer applications at the facility.

(3) For organic HAP or VOC emissions, each topcoat application operation, which is the total of all topcoat applications at the facility.

(4) For organic HAP or VOC emissions, each repainting operation, which is the total of all repainting at the facility.

(5) Each chemical milling maskant application operation, which is the total of all chemical milling maskant applications at the facility.

(6) Each waste storage and handling operation, which is the total of all

waste handling and storage at the facility.

(7) For inorganic HAP emissions, each spray booth or hangar that contains a primer or topcoat application operation subject to § 63.745(g) or a depainting operation subject to § 63.746(b)(4).

(d) An owner or operator of an affected source subject to this subpart shall obtain an operating permit from the permitting authority in the State in which the source is located. The owner or operator shall apply for and obtain such permit in accordance with the regulations contained in part 70 of this chapter and in applicable State regulations.

(e) All wastes that are determined to be hazardous wastes under the Resource Conservation and Recovery Act of 1976 (PL 94-580) (RCRA) as implemented by 40 CFR parts 260 and 261, and that are subject to RCRA requirements as implemented in 40 CFR parts 262 through 268, are exempt from the requirements of this subpart.

(f) This subpart does not contain control requirements for use of specialty coatings, adhesives, adhesive bonding primers, or sealants at aerospace facilities. It also does not regulate research and development, quality control, and laboratory testing activities, chemical milling, metal finishing, electrodeposition (except for electrodeposition of paints), composites processing (except for cleaning and coating of composite parts or components that become part of an aerospace vehicle or component as well as composite tooling that comes in contact with such composite parts or components prior to cure), electronic parts and assemblies (except for cleaning and topcoating of completed assemblies), manufacture of aircraft transparencies, and wastewater operations at aerospace facilities. These requirements also do not apply to parts and assemblies not critical to the vehicle's structural integrity or flight performance. The requirements of this subpart also do not apply to primers, topcoats, chemical milling maskants, strippers, and cleaning solvents containing HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens, as determined from

manufacturer's representations. Additional specific exemptions from regulatory coverage are set forth in paragraphs (e), (g), (h), (i) and (j) of this section and §§ 63.742, 63.744(a)(1), (b), (e), 63.745(a), (f)(3), (g)(4), 63.746(a), (b)(5), 63.747(c)(3), and 63.749(d).

(g) The requirements for primers, topcoats, and chemical milling maskants in § 63.745 and § 63.747 do not apply to the use of low-volume coatings in these categories for which the annual total of each separate formulation used at a facility does not exceed 189 l (50 gal), and the combined annual total of all such primers, topcoats, and chemical milling maskants used at a facility does not exceed 757 l (200 gal). Primers and topcoats exempted under paragraph (f) of this section and under § 63.745(f)(3) and (g)(4) are not included in the 50 and 200 gal limits. Chemical milling maskants exempted under § 63.747(c)(3) are also not included in these limits.

(h) Regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters), are exempt from the requirements of this subpart, except for depainting operations found in § 63.746.

(i) Any waterborne coating for which the manufacturer's supplied data demonstrate that organic HAP and VOC contents are less than or equal to the organic HAP and VOC content limits for its coating type, as specified in §§ 63.745(c) and 63.747(c), is exempt from the following requirements of this subpart: §§ 63.745(d)–(e), 63.747(d)–(e), 63.749(d) and (h), 63.750(c)–(h) and (k)–(m), 63.752(c) and (f), and 63.753(c) and (e). A facility shall maintain the manufacturer's supplied data and annual purchase records for each exempt waterborne coating readily available for inspection and review and shall retain these data for 5 years.

(j) This subpart does not apply to rework operations performed on antique aerospace vehicles or components.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15016, Mar. 27, 1998]

§ 63.742 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Aerospace facility means any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component.

Aerospace vehicle or component means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

Aircraft fluid systems means those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

Aircraft transparency means the aircraft windshield, canopy, passenger windows, lenses, and other components which are constructed of transparent materials.

Antique aerospace vehicle or component means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

Carbon adsorber means one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source.

Carbon Adsorber control efficiency means the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency.

Chemical milling maskant means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are also exempt from this sub-

part. (See also Type I and Type II etchant definitions.)

Chemical milling maskant application operation means application of chemical milling maskant for use with Type I or Type II chemical milling etchants.

Cleaning operation means collectively spray gun, hand-wipe, and flush cleaning operations.

Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f).

Closed-cycle depainting system means a dust-free, automated process that removes permanent coating in small sections at a time and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

Coating means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself.

Coating operation means the use of a spray booth, tank, or other enclosure or any area, such as a hangar, for the application of a single type of coating (e.g., primer); the use of the same spray booth for the application of another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

Coating unit means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area in order to be included in this definition.

Confined space means a space that: (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy.

Control device means destruction and/or recovery equipment used to destroy or recover HAP or VOC emissions generated by a regulated operation.

Control system means a combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of HAP or VOC emissions generated by a regulated operation.

Depainting means the removal of a permanent coating from the outer surface of an aerospace vehicle or component, whether by chemical or non-chemical means. For non-chemical means, this definition excludes hand and mechanical sanding, and any other non-chemical removal processes that do not involve blast media or other mechanisms that would result in airborne particle movement at high velocity.

Depainting operation means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

Electrodeposition of paint means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

Electrostatic spray means a method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them.

Exempt solvent means specified organic compounds that have been determined by the EPA to have negligible photochemical reactivity and are listed in 40 CFR 51.100.

Flush cleaning means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be

assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included.

Hand-wipe cleaning operation means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

Hazardous air pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Act.

High efficiency particulate air (HEPA) filter means a filter that has a 99.97 percent reduction efficiency for 0.3 micron aerosol.

High volume low pressure (HVLP) spray equipment means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

Inorganic hazardous air pollutant (HAP) means any HAP that is not organic.

Leak means any visible leakage, including misting and clouding.

Limited access space means internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

Mechanical sanding means aerospace vehicle or component surface conditioning which uses directional and random orbital abrasive tools and aluminum oxide or nylon abrasive pads for the purpose of corrosion rework, substrate repair, prepaint surface preparation, and other maintenance activities.

Natural draft opening means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

Non-chemical based depainting equipment means any depainting equipment or technique, including, but not limited to, media blasting equipment, that

can depaint an aerospace vehicle or component in the absence of a chemical stripper. This definition does not include mechanical sanding or hand sanding.

Nonregenerative carbon adsorber means a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel.

Operating parameter value means a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation.

Organic hazardous air pollutant (HAP) means any HAP that is organic.

Primer means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Coatings that are defined as specialty coatings are not included under this definition.

Radome means the non-metallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators, or organic-water separators or organic removal devices such as decanters, strippers, or thin-film evaporation units.

Research and Development means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

Self-priming topcoat means a topcoat that is applied directly to an uncoated

aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

Semi-aqueous cleaning solvent means a solution in which water is a primary ingredient ("60 percent of the solvent solution as applied must be water.)

Softener means a liquid that is applied to an aerospace vehicle or component to degrade coatings such as primers and topcoats specifically as a preparatory step to subsequent depainting by non-chemical based depainting equipment. Softeners may contain VOC but shall not contain any HAP as determined from MSDS's or manufacturer supplied information.

Solids means the non-volatile portion of the coating which after drying makes up the dry film.

Space vehicle means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

Specialty coating means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Individual specialty coatings are defined in appendix A to this subpart and in the CTG for Aerospace Manufacturing and Rework Operations (EPA 453/R-97-004).

Spot stripping means the depainting of an area where it is not technically feasible to use a non-chemical depainting technique.

Spray gun means a device that atomizes a coating or other material and

projects the particulates or other material onto a substrate.

Stripper means a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers and topcoats.

Surface preparation means the removal of contaminants from the surface of an aerospace vehicle or component, or the activation or reactivation of the surface in preparation for the application of a coating.

Temporary total enclosure means a total enclosure that is constructed for the sole purpose of measuring the emissions from an affected source that are not delivered to an emission control device. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent emission capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it conforms to the requirements found in § 63.750(g)(4) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

Topcoat means a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Coatings that are defined as specialty coatings are not included under this definition.

Total enclosure means a permanent structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100% capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process

equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. An enclosure that meets the requirements found in § 63.750(g)(4) is a permanent total enclosure.

Touch-up and repair operation means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

Two-stage filter system means a dry particulate filter system using two layers of filter media to remove particulate. The first stage is designed to remove the bulk of the particulate and a higher efficiency second stage is designed to remove smaller particulate.

Type I etchant means a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

Type II etchant means a chemical milling etchant that is a strong sodium hydroxide solution containing amines.

Volatile organic compound (VOC) means any compound defined as VOC in 40 CFR 51.100. This includes any organic compound other than those determined by the EPA to be an exempt solvent. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard.

Waterborne (water-reducible) coating means any coating that contains more than 5 percent water by weight as applied in its volatile fraction.

Waterwash system means a control system that utilizes flowing water to remove particulate emissions from the exhaust air stream in spray coating application or dry media blast depainting operations.

Nomenclature for determining carbon adsorber efficiency—The nomenclature defined below is used in § 63.750(g):

(1) A_k = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) C_{aj} = the concentration of HAP or VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) C_{bi} = the concentration of HAP or VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) C_{di} = the concentration of HAP or VOC in each gas stream (i) entering the emission control device from the affected source, in parts per million by volume.

(5) C_{fk} = the concentration of HAP or VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(6) C_{gv} = the concentration of HAP or VOC in each uncontrolled gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual carbon adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts to the individual carbon adsorber vessels.

(7) C_{hv} = the concentration of HAP or VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8) E = the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9) F = the HAP or VOC emission capture efficiency of the HAP or VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10) FV = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11) H_v = the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(12) H_{sys} = the efficiency of the carbon adsorption system calculated when each carbon adsorber vessel has an in-

dividual exhaust stack (expressed as a fraction).

(13) M_{ci} = the total mass in kilograms of each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7 to 30-day period, as appropriate, as determined from records at the affected source. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the mass of the coating has been determined, appropriate adjustments shall be made to account for them.

(14) M_r = the total mass in kilograms of HAP or VOC recovered for a 7 to 30-day period.

(15) Q_{aj} = the volumetric flow rate of each gas stream (j) exiting the emission control device in either dry standard cubic meters per hour when EPA Method 18 in appendix A of part 60 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(16) Q_{bi} = the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(17) Q_{di} = the volumetric flow rate of each gas stream (i) entering the emission control device from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(18) Q_{fk} = the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(19) Q_{gv} = the volumetric flow rate of each gas stream entering each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration. For purposes of calculating the efficiency of the individual carbon adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that carbon adsorber vessel.

(20) Q_{hv} = the volumetric flow rate of each gas stream exiting each individual carbon adsorber vessel (v) in either dry standard cubic meters per hour when EPA Method 18 is used to measure HAP or VOC concentration or in standard cubic meters per hour (wet basis) when EPA Method 25A is used to measure HAP or VOC concentration.

(21) Q_{ini} = the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct in standard cubic meters per hour (wet basis).

(22) Q_{outj} = the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood in standard cubic meters per hour (wet basis).

(23) R = the overall HAP or VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(24) RS_i = the total mass in kilograms of HAP or VOC retained in the coating after drying.

(25) W_{oi} = the weight fraction of VOC in each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7- to 30-day period, as appropriate, as determined by EPA Method 24 or formulation data. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or if ingredients are added after the weight fraction of HAP or VOC in the coating has been determined, appropriate adjustments shall be made to account for them.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15017, Mar. 27, 1998]

§ 63.743 Standards: General.

(a) Except as provided in paragraphs (a)(4) through (a)(10) of this section and in Table 1 of this subpart, each owner or operator of an affected source subject to this subpart is also subject to the following sections of subpart A of this part:

(1) § 63.4, Prohibited activities and circumvention;

(2) § 63.5, Construction and reconstruction; and

(3) § 63.6, Compliance with standards and maintenance requirements.

(4) For the purposes of this subpart, all affected sources shall submit any request for an extension of compliance not later than 120 days before the affected source's compliance date. The extension request should be requested for the shortest time necessary to attain compliance, but in no case shall exceed 1 year.

(5)(i) For the purposes of this subpart, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of his/her intention to deny approval of a request for an extension of compliance submitted under either § 63.6(i)(4) or § 63.6(i)(5) within 60 calendar days after receipt of sufficient information to evaluate the request.

(ii) In addition, for purposes of this subpart, if the Administrator does not notify the owner or operator in writing of his/her intention to deny approval within 60 calendar days after receipt of sufficient information to evaluate a request for an extension of compliance, then the request shall be considered approved.

(6)(i) For the purposes of this subpart, the Administrator (or the State) will notify the owner or operator in writing of the status of his/her application submitted under § 63.6(i)(4)(ii) (that is, whether the application contains sufficient information to make a determination) within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted, rather than 15 calendar days as provided for in § 63.6(i)(13)(i).

(ii) In addition, for the purposes of this subpart, if the Administrator does not notify the owner or operator in

writing of the status of his/her application within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted, then the information in the application or the supplementary information is to be considered sufficient upon which to make a determination.

(7) For the purposes of this subpart, each owner or operator who has submitted an extension request application under § 63.6(i)(5) is to be provided 30 calendar days to present additional information or arguments to the Administrator after he/she is notified that the application is not complete, rather than 15 calendar days as provided for in § 63.6(i)(13)(ii).

(8) For the purposes of this subpart, each owner or operator is to be provided 30 calendar days to present additional information to the Administrator after he/she is notified of the intended denial of a compliance extension request submitted under either § 63.6(i)(4) or § 63.6(i)(5), rather than 15 calendar days as provided for in § 63.6(i)(12)(iii)(B) and § 63.6(i)(13)(iii)(B).

(9) For the purposes of this subpart, a final determination to deny any request for an extension submitted under either § 63.6(i)(4) or § 63.6(i)(5) will be made within 60 calendar days after presentation of additional information or argument (if the application is complete), or within 60 calendar days after the final date specified for the presentation if no presentation is made, rather than 30 calendar days as provided for in § 63.6(i)(12)(iv) and § 63.6(i)(13)(iv).

(10) For the purposes of compliance with the requirements of § 63.5(b)(4) of the General Provisions and this subpart, owners or operators of existing primer or topcoat application operations and repainting operations who construct or reconstruct a spray booth or hangar that does not have the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined shall only be required to notify the Administrator of such construction or reconstruction on an annual basis. Notification shall be submitted on or before March 1 of each year and shall include the information required in § 63.5(b)(4) for each such spray booth or hangar

constructed or reconstructed during the prior calendar year, except that such information shall be limited to inorganic HAP's. No advance notification or written approval from the Administrator pursuant to § 63.5(b)(3) shall be required for the construction or reconstruction of such a spray booth or hangar unless the booth or hangar has the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined.

(b) *Startup, shutdown, and malfunction plan.* Each owner or operator that uses an air pollution control device or equipment to control HAP emissions shall prepare and operate in accordance with a startup, shutdown, and malfunction plan in accordance with § 63.6. Dry particulate filter systems operated per the manufacturer's instructions are exempt from a startup, shutdown, and malfunction plan. A startup, shutdown, and malfunction plan shall be prepared for facilities using locally prepared operating procedures. In addition to the information required in § 63.6, this plan shall also include the following provisions:

(1) The plan shall specify the operation and maintenance criteria for each air pollution control device or equipment and shall include a standardized checklist to document the operation and maintenance of the equipment;

(2) The plan shall include a systematic procedure for identifying malfunctions and for reporting them immediately to supervisory personnel; and

(3) The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur.

(c) An owner or operator who uses an air pollution control device or equipment not listed in this subpart shall submit a description of the device or equipment, test data verifying the performance of the device or equipment in controlling organic HAP and/or VOC emissions, as appropriate, and specific operating parameters that will be monitored to establish compliance with the standards to the Administrator for approval not later than 120 days prior to the compliance date.

(d) Instead of complying with the individual coating limits in §§63.745 and 63.747, a facility may choose to comply with the averaging provisions specified in paragraphs (d)(1) through (d)(6) of this section.

(1) Each owner or operator of a new or existing source shall use any combination of primers, topcoats (including self-priming topcoats), Type I chemical milling maskants, or Type II chemical milling maskants such that the monthly volume-weighted average organic HAP and VOC contents of the combination of primers, topcoats, Type I chemical milling maskants, or Type II chemical milling maskants, as determined in accordance with the applicable procedures set forth in §63.750, complies with the specified content limits in §§63.745(c) and 63.747(c), unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(2) Averaging is allowed only for uncontrolled primers, topcoats (including self-priming topcoats), Type I chemical milling maskants, or Type II chemical milling maskants.

(3) Averaging is not allowed between primers and topcoats (including self-priming topcoats).

(4) Averaging is not allowed between Type I and Type II chemical milling maskants.

(5) Averaging is not allowed between primers and chemical milling maskants, or between topcoats and chemical milling maskants.

(6) Each averaging scheme shall be approved in advance by the permitting agency and adopted as part of the facility's title V permit.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15017, Mar. 27, 1998]

§63.744 Standards: Cleaning operations.

(a) *Housekeeping measures.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall comply with the requirements in these paragraphs unless the cleaning solvent used is identified in Table 1 of this section or contains HAP and VOC below the de minimis levels specified in §63.741(f).

(1) Place cleaning solvent-laden cloth, paper, or any other absorbent

applicators used for cleaning in bags or other closed containers upon completing their use. Ensure that these bags and containers are kept closed at all times except when depositing or removing these materials from the container. Use bags and containers of such design so as to contain the vapors of the cleaning solvent. Cotton-tipped swabs used for very small cleaning operations are exempt from this requirement.

(2) Store fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, used in aerospace cleaning operations in closed containers.

(3) Conduct the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent cleaning solvents in such a manner that minimizes spills.

(b) *Hand-wipe cleaning.* Each owner or operator of a new or existing hand-wipe cleaning operation (excluding cleaning of spray gun equipment performed in accordance with paragraph (c) of this section) subject to this subpart shall use cleaning solvents that meet one of the requirements specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section. Cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in §63.741(f) are exempt from the requirements in paragraphs (b)(1), (b)(2), and (b)(3) of this section.

(1) Meet one of the composition requirements in Table 1 of this section;

(2) Have a composite vapor pressure of 45 mm Hg (24.1 in. H₂O) or less at 20 °C (68 °F); or

(3) Demonstrate that the volume of hand-wipe solvents used in cleaning operations has been reduced by at least 60% from a baseline adjusted for production. The baseline shall be established as part of an approved alternative plan administered by the State. The alternative plan shall be submitted by the State under section 112(l) of the Act and approved by the Administrator, and shall demonstrate that the 60% volume reduction in cleaning solvents provides equivalent reductions to the requirements in paragraph (b)(1) or (b)(2).

(c) *Spray gun cleaning.* Each owner or operator of a new or existing spray gun cleaning operation subject to this subpart in which spray guns are used for the application of coatings or any other materials that require the spray guns to be cleaned shall use one or more of the techniques, or their equivalent, specified in paragraphs (c)(1) through (c)(4) of this section. Spray gun cleaning operations using cleaning solvent solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f) are exempt from the requirements in paragraphs (c)(1) through (c)(4) of this section.

(1)(i) Enclosed system. Clean the spray gun in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing solvent through the gun.

(ii) If leaks are found during the monthly inspection required in § 63.751(a), repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed, and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

(2) *Nonatomized cleaning.* Clean the spray gun by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air is to be used. Direct the cleaning solvent from the spray gun into a vat, drum, or other waste container that is closed when not in use.

(3) *Disassembled spray gun cleaning.* Disassemble the spray gun and clean the components by hand in a vat, which shall remain closed at all times except when in use. Alternatively, soak the components in a vat, which shall remain closed during the soaking period and when not inserting or removing components.

(4) *Atomizing cleaning.* Clean the spray gun by forcing the cleaning solvent through the gun and direct the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.

(d) *Flush cleaning.* Each owner or operator of a flush cleaning operation subject to this subpart (excluding those in which Table 1 or semi-aqueous cleaning solvents are used) shall empty the used cleaning solvent each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control.

(e) *Exempt cleaning operations.* The following cleaning operations are exempt from the requirements of paragraph (b) of this section:

(1) Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

(2) Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

(3) Cleaning and surface activation prior to adhesive bonding;

(4) Cleaning of electronic parts and assemblies containing electronic parts;

(5) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

(6) Cleaning of fuel cells, fuel tanks, and confined spaces;

(7) Surface cleaning of solar cells, coated optics, and thermal control surfaces;

(8) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;

(9) Cleaning of metallic and non-metallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

(10) Cleaning of aircraft transparencies, polycarbonate, or glass substrates;

(11) Cleaning and cleaning solvent usage associated with research and development, quality control, and laboratory testing;

(12) Cleaning operations, using nonflammable liquids, conducted within five feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit

on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections; and

(13) Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR 82.4.

TABLE 1.—COMPOSITION REQUIREMENTS FOR APPROVED CLEANING SOLVENTS

Cleaning solvent type	Composition requirements
Aqueous	Cleaning solvents in which water is the primary ingredient (≥80 percent of cleaning solvent solution as applied must be water). Detergents, surfactants, and bio-enzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93 °C (200 °F) (as reported by the manufacturer), and the solution must be miscible with water.
Hydrocarbon-based	Cleaners that are composed of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of 7 mm Hg at 20 °C (3.75 in. H ₂ O at 68 °F). These cleaners also contain no HAP.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15018, Mar. 27 1998]

§ 63.745 Standards: Primer and topcoat application operations.

(a) Each owner or operator of a new or existing primer or topcoat application operation subject to this subpart shall comply with the requirements specified in paragraph (c) of this section for those coatings that are uncontrolled (no control device is used to reduce organic HAP emissions from the operation), and in paragraph (d) of this section for those coatings that are controlled (organic HAP emissions from the operation are reduced by the use of a control device). Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from the requirements of this section.

(b) Each owner or operator shall conduct the handling and transfer of primers and topcoats to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

(c) *Uncontrolled coatings—organic HAP and VOC content levels.* Each owner or operator shall comply with the organic HAP and VOC content limits specified in paragraphs (c)(1) through (c)(4) of this section for those coatings that are uncontrolled.

(1) Organic HAP emissions from primers shall be limited to an organic

HAP content level of no more than 350 g/l (2.9 lb/gal) of primer (less water) as applied.

(2) VOC emissions from primers shall be limited to an VOC content level of no more than 350 g/l (2.9 lb/gal) of primer (less water and exempt solvents) as applied.

(3) Organic HAP emissions from topcoats shall be limited to an organic HAP content level of no more than 420 g/l (3.5 lb/gal) of coating (less water) as applied. Organic HAP emissions from self-priming topcoats shall be limited to an organic HAP content level of no more than 420 g/l (3.5 lb/gal) of self-priming topcoat (less water) as applied.

(4) VOC emissions from topcoats shall be limited to a VOC content level of no more than 420 g/l (3.5 lb/gal) of coating (less water and exempt solvents) as applied. VOC emissions from self-priming topcoats shall be limited to a VOC content level of no more than 420 g/l (3.5 lb/gal) of self-priming topcoat (less water and exempt solvents) as applied.

(d) *Controlled coatings—control system requirements.* Each control system shall reduce the operation's organic HAP and VOC emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used and in § 63.750(h) when

a control device other than a carbon adsorber is used.

(e) *Compliance methods.* Compliance with the organic HAP and VOC content limits specified in paragraphs (c)(1) through (c)(4) of this section shall be accomplished by using the methods specified in paragraphs (e)(1) and (e)(2) of this section either by themselves or in conjunction with one another.

(1) Use primers and topcoats (including self-priming topcoats) with HAP and VOC content levels equal to or less than the limits specified in paragraphs (c)(1) through (c)(4) of this section; or

(2) Use the averaging provisions described in § 63.743(d).

(f) *Application equipment.* Except as provided in paragraph (f)(3) of this section, each owner or operator of a new or existing primer or topcoat (including self-priming topcoat) application operation subject to this subpart in which any of the coatings contain organic HAP or VOC shall comply with the requirements specified in paragraphs (f)(1) and (f)(2) of this section.

(1) All primers and topcoats (including self-priming topcoats) shall be applied using one or more of the application techniques specified in paragraphs (f)(1)(i) through (f)(1)(ix) of this section.

- (i) Flow/curtain coat application;
- (ii) Dip coat application;
- (iii) Roll coating;
- (iv) Brush coating;
- (v) Cotton-tipped swab application;
- (vi) Electrodeposition (dip) coating;
- (vii) High volume low pressure (HVLP) spraying;
- (viii) Electrostatic spray application; or

(ix) Other coating application methods that achieve emission reductions equivalent to HVLP or electrostatic spray application methods, as determined according to the requirements in § 63.750(i).

(2) All application devices used to apply primers or topcoats (including self-priming topcoats) shall be operated according to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at all times. Equipment modified by the facility shall maintain a transfer effi-

ciency equivalent to HVLP and electrostatic spray application techniques.

(3) The following situations are exempt from the requirements of paragraph (f)(1) of this section:

(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

(ii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods specified in paragraph (f)(1) of this section;

(iii) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified in paragraph (f)(1) of this section;

(iv) The use of airbrush application methods for stenciling, lettering, and other identification markings;

(v) The use of hand-held spray can application methods; and

(vi) Touch-up and repair operations.

(g) *Inorganic HAP emissions.* Except as provided in paragraph (g)(4) of this section, each owner or operator of a new or existing primer or topcoat application operation subject to this subpart in which any of the coatings that are spray applied contain inorganic HAP, shall comply with the applicable requirements in paragraphs (g)(1) through (g)(3) of this section.

(1) Apply these coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated and exhausted through one or more outlets.

(2) Control the air stream from this operation as follows:

(i) For existing sources, the owner or operator must choose one of the following:

(A) Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in § 63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 of this section; or

TABLE 1.—TWO-STAGE ARRESTOR; LIQUID PHASE CHALLENGE FOR EXISTING SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, μm
>90	>5.7
>50	>4.1
>10	>2.2

TABLE 2.—TWO-STAGE ARRESTOR; SOLID PHASE CHALLENGE FOR EXISTING SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, μm
>90	>8.1
>50	>5.0
>10	>2.6

(B) Before exhausting it to the atmosphere, pass the air stream through a waterwash system that shall remain in operation during all coating application operations; or

(C) Before exhausting it to the atmosphere, pass the air stream through an air pollution control system that meets or exceeds the efficiency data points in Tables 1 and 2 of this section and is approved by the permitting authority.

(ii) For new sources, either:

(A) Before exhausting it to the atmosphere, pass the air stream through a dry particulate filter system certified using the methods described in §63.750(o) to meet or exceed the efficiency data points in Tables 3 and 4 of this section; or

TABLE 3.—THREE-STAGE ARRESTOR; LIQUID PHASE CHALLENGE FOR NEW SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, μm
>95	>2.0
>80	>1.0
>65	>0.42

TABLE 4.—THREE-STAGE ARRESTOR; SOLID PHASE CHALLENGE FOR NEW SOURCES

Filtration efficiency requirement, %	Aerodynamic particle size range, μm
>95	>2.5
>85	>1.1
>75	>0.70

(B) Before exhausting it to the atmosphere, pass the air stream through

an air pollution control system that meets or exceeds the efficiency data points in Tables 3 and 4 of this section and is approved by the permitting authority.

(iii) Owners or operators of new sources that have commenced construction or reconstruction after June 6, 1994 but prior to October 29, 1996 may comply with the following requirements in lieu of the requirements in paragraph (g)(2)(ii) of this section:

(A) Pass the air stream through either a two-stage dry particulate filter system or a waterwash system before exhausting it to the atmosphere.

(B) If the primer or topcoat contains chromium or cadmium, control shall consist of a HEPA filter system, three-stage filter system, or other control system equivalent to the three stage filter system as approved by the permitting agency.

(iv) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter and read and record the pressure drop once per shift; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limit(s).

(v) If a waterwash system is used, continuously monitor the water flow rate and read and record the water flow rate once per shift.

(3) If the pressure drop across the dry particulate filter system, as recorded pursuant to §63.752(d)(1), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, shut down the operation immediately and take corrective action. If the water path in the waterwash system fails the visual continuity/flow characteristics check, or the water flow rate recorded pursuant to §63.752(d)(2) exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or

locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop or water flow rate is returned within the specified limit(s).

(4) The requirements of paragraphs (g)(1) through (g)(3) of this section do not apply to the following:

- (i) Touch-up of scratched surfaces or damaged paint;
- (ii) Hole daubing for fasteners;
- (iii) Touch-up of trimmed edges;
- (iv) Coating prior to joining dissimilar metal components;
- (v) Stencil operations performed by brush or air brush;
- (vi) Section joining;
- (vii) Touch-up of bushings and other similar parts;
- (viii) Sealant detackifying;
- (ix) Painting parts in an area identified in a title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth; and
- (x) The use of hand-held spray can application methods.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15019, Mar. 27, 1998]

§ 63.746 Standards: Depainting operations.

(a) *Applicability.* Each owner or operator of a new or existing depainting operation subject to this subpart shall comply with the requirements in paragraphs (a)(1) through (a)(3) of this section, and with the requirements specified in paragraph (b) where there are no controls for organic HAP, or paragraph (c) where organic HAP are controlled using a control system. This section does not apply to an aerospace manufacturing or rework facility that depaints six or less completed aerospace vehicles in a calendar year.

(1) The provisions of this section apply to the depainting of the outer surface areas of completed aerospace vehicles, including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft, and the outer casing and stabilizers of missiles and rockets. These provisions do not apply to the depainting of parts or units normally removed from the aerospace vehicle for

depainting. However, depainting of wings and stabilizers is always subject to the requirements of this section regardless of whether their removal is considered by the owner or operator to be normal practice for depainting.

(2) Aerospace vehicles or components that are intended for public display, no longer operational, and not easily capable of being moved are exempt from the requirements of this section.

(3) The following depainting operations are exempt from the requirements of this section:

- (i) Depainting of radomes; and
- (ii) Depainting of parts, subassemblies, and assemblies normally removed from the primary aircraft structure before depainting.

(b)(1) *HAP emissions—non-HAP chemical strippers and technologies.* Except as provided in paragraphs (b)(2) and (b)(3) of this section, each owner or operator of a new or existing aerospace depainting operation subject to this subpart shall emit no organic HAP from chemical stripping formulations and agents or chemical paint softeners.

(2) Where non-chemical based equipment is used to comply with paragraph (b)(1) of this section, either in total or in part, each owner or operator shall operate and maintain the equipment according to the manufacturer's specifications or locally prepared operating procedures. During periods of malfunctions of such equipment, each owner or operator may use substitute materials during the repair period provided the substitute materials used are those available that minimize organic HAP emissions. In no event shall substitute materials be used for more than 15 days annually, unless such materials are organic HAP-free.

(3) Each owner or operator of a new or existing depainting operation shall not, on an annual average basis, use more than 26 gallons of organic HAP-containing chemical strippers or alternatively 190 pounds of organic HAP per commercial aircraft depainted; or more than 50 gallons of organic HAP-containing chemical strippers or alternatively 365 pounds of organic HAP per military aircraft depainted for spot stripping and decal removal.

(4) Each owner or operator of a new or existing depainting operation complying with paragraph (b)(2), that generates airborne inorganic HAP emissions from dry media blasting equipment, shall also comply with the requirements specified in paragraphs (b)(4)(i) through (b)(4)(v) of this section.

(i) Perform the depainting operation in an enclosed area, unless a closed-cycle depainting system is used.

(ii)(A) For existing sources pass any air stream removed from the enclosed area or closed-cycle depainting system through a dry particulate filter system, certified using the method described in §63.750(o) to meet or exceed the efficiency data points in Tables 1 and 2 of §63.745, through a baghouse, or through a waterwash system before exhausting it to the atmosphere.

(B) For new sources pass any air stream removed from the enclosed area or closed-cycle depainting system through a dry particulate filter system certified using the method described in §63.750(o) to meet or exceed the efficiency data points in Tables 3 and 4 of §63.745 or through a baghouse before exhausting it to the atmosphere.

(iii) If a dry particulate filter system is used, the following requirements shall be met:

(A) Maintain the system in good working order;

(B) Install a differential pressure gauge across the filter banks;

(C) Continuously monitor the pressure drop across the filter, and read and record the pressure drop once per shift; and

(D) Take corrective action when the pressure drop exceeds or falls below the filter manufacturer's recommended limits.

(iv) If a waterwash system is used, continuously monitor the water flow rate, and read and record the water flow rate once per shift.

(v) If the pressure drop, as recorded pursuant to §63.752(e)(7), is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, whichever is more stringent, shut down the operation immediately and take corrective action. If the water path in the waterwash system fails the visual continuity/flow

characteristics check, as recorded pursuant to §63.752(e)(7), or the water flow rate, as recorded pursuant to §63.752(d)(2), exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, shut down the operation immediately and take corrective action. The operation shall not be resumed until the pressure drop or water flow rate is returned within the specified limit(s).

(5) Mechanical and hand sanding operations are exempt from the requirements in paragraph (b)(4) of this section.

(c) *Organic HAP emissions—organic HAP-containing chemical strippers.* Each owner or operator of a new or existing organic HAP-containing chemical stripper depainting operation subject to this subpart shall comply with the requirements specified in this paragraph.

(1) All organic HAP emissions from the operation shall be reduced by the use of a control system. Each control system that was installed before the effective date shall reduce the operations' organic HAP emissions to the atmosphere by 81 percent or greater, taking into account capture and destruction or removal efficiencies.

(2) Each control system installed on or after the effective date shall reduce organic HAP emissions to the atmosphere by 95 percent or greater. Reduction shall take into account capture and destruction or removal efficiencies, and may take into account the volume of chemical stripper used relative to baseline levels (e.g., the 95 percent efficiency may be achieved by controlling emissions at 81 percent efficiency with a control system and using 74 percent less stripper than in baseline applications). The baseline shall be calculated using data from 1996 and 1997, which shall be on a usage per aircraft or usage per square foot of surface basis.

(3) The capture and destruction or removal efficiencies are to be determined using the procedures in §63.750(g) when a carbon adsorber is used and those in

§ 63.750(h) when a control device other than a carbon adsorber is used.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15020, Mar. 27, 1998]

§ 63.747 Standards: Chemical milling maskant application operations.

(a) Each owner or operator of a new or existing chemical milling maskant operation subject to this subpart shall comply with the requirements specified in paragraph (c) of this section for those chemical milling maskants that are uncontrolled (no control device is used to reduce organic HAP emissions from the operation) and in paragraph (d) of this section for those chemical milling maskants that are controlled (organic HAP emissions from the operation are reduced by the use of a control device).

(b) Each owner or operator shall conduct the handling and transfer of chemical milling maskants to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

(c) *Uncontrolled maskants—organic HAP and VOC content levels.* Each owner or operator shall comply with the organic HAP and VOC content limits specified in paragraphs (c)(1) and (c)(2) of this section for each chemical milling maskant that is uncontrolled.

(1) Organic HAP emissions from chemical milling maskants shall be limited to organic HAP content levels of no more than 622 grams of organic HAP per liter (5.2 lb/gal) of Type I chemical milling maskant (less water) as applied, and no more than 160 grams of organic HAP per liter (1.3 lb/gal) of Type II chemical milling maskant (less water) as applied.

(2) VOC emissions from chemical milling maskants shall be limited to VOC content levels of no more than 622 grams of VOC per liter (5.2 lb/gal) of Type I chemical milling maskant (less water and exempt solvents) as applied, and no more than 160 grams of VOC per liter (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.

(3) The requirements of paragraphs (c)(1) and (c)(2) of this section do not apply to the following:

(i) Touch-up of scratched surfaces or damaged maskant; and

(ii) Touch-up of trimmed edges.

(d) *Controlled maskants—control system requirements.* Each control system shall reduce the operation's organic HAP and VOC emissions to the atmosphere by 81% or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in § 63.750(g) when a carbon adsorber is used and in § 63.750(h) when a control device other than a carbon adsorber is used.

(e) *Compliance methods.* Compliance with the organic HAP and VOC content limits specified in paragraphs (c)(1) and (c)(2) of this section may be accomplished by using the methods specified in paragraphs (e)(1) and (e)(2) of this section either by themselves or in conjunction with one another.

(1) Use chemical milling maskants with HAP and VOC content levels equal to or less than the limits specified in paragraphs (c)(1) and (c)(2) of this section.

(2) Use the averaging provisions described in § 63.743(d).

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15021, Mar. 27, 1998]

§ 63.748 Standards: Handling and storage of waste.

Except as provided in § 63.741(e), the owner or operator of each facility subject to this subpart that produces a waste that contains HAP shall conduct the handling and transfer of the waste to or from containers, tanks, vats, vessels, and piping systems in such a manner that minimizes spills.

§ 63.749 Compliance dates and determinations.

(a) *Compliance dates.* (1) Each owner or operator of an existing affected source subject to this subpart shall comply with the requirements of this subpart by September 1, 1998, except as specified in paragraph (a)(2) of this section. Owners or operators of new affected sources subject to this subpart shall comply on the effective date or upon startup, whichever is later. In addition, each owner or operator shall comply with the compliance dates specified in § 63.6(b) and (c).

(2) Owners or operators of existing primer or topcoat application operations and repainting operations who

construct or reconstruct a spray booth or hangar must comply with the new source requirements for inorganic HAP specified in §§ 63.745(g)(2)(ii) and 63.746(b)(4) for that new spray booth or hangar upon startup. Such sources must still comply with all other existing source requirements by September 1, 1998.

(b) *General.* Each facility subject to this subpart shall be considered in non-compliance if the owner or operator fails to submit a startup, shutdown, and malfunction plan as required by § 63.743(b) or uses a control device other than one specified in this subpart that has not been approved by the Administrator, as required by § 63.743(c).

(c) *Cleaning operations.* Each cleaning operation subject to this subpart shall be considered in noncompliance if the owner or operator fails to institute and carry out the housekeeping measures required under § 63.744(a). Incidental emissions resulting from the activation of pressure release vents and valves on enclosed cleaning systems are exempt from this paragraph.

(1) *Hand-wipe cleaning.* An affected hand-wipe cleaning operation shall be considered in compliance when all hand-wipe cleaning solvents, excluding those used for hand cleaning of spray gun equipment under § 63.744(c)(3), meet either the composition requirements specified in § 63.744(b)(1) or the vapor pressure requirement specified in § 63.744(b)(2).

(2) *Spray gun cleaning.* An affected spray gun cleaning operation shall be considered in compliance when each of the following conditions is met:

(i) One of the four techniques specified in § 63.744 (c)(1) through (c)(4) is used;

(ii) The technique selected is operated according to the procedures specified in § 63.744 (c)(1) through (c)(4) as appropriate; and

(iii) If an enclosed system is used, monthly visual inspections are conducted and any leak detected is repaired within 15 days after detection. If the leak is not repaired by the 15th day after detection, the solvent shall be removed and the enclosed cleaner shall be shut down until the cleaner is repaired or its use is permanently discontinued.

(3) *Flush cleaning.* An affected flush cleaning operation shall be considered in compliance if the operating requirements specified in § 63.744(d) are implemented and carried out.

(d) *Organic HAP and VOC content levels—primer and topcoat application operations—*(1) *Performance test periods.* For uncontrolled coatings that are not averaged, each 24 hours is considered a performance test. For compliant and non-compliant coatings that are averaged together, each 30-day period is considered a performance test, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program. When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When using a carbon adsorber, each rolling material balance period is considered a performance test.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in paragraph § 63.745, unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (d)(2)(i) through (d)(2)(vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) The primer application operation is considered in compliance when the conditions specified in paragraphs (d)(3)(i) through (d)(3)(iv) of this section, as applicable, and in paragraph (e) of this section are met. Failure to meet any one of the conditions identified in these paragraphs shall constitute non-compliance.

(i) For all uncontrolled primers, all values of H_i and H_a (as determined using the procedures specified in § 63.750 (c) and (d)) are less than or equal to 350 grams of organic HAP per liter (2.9 lb/gal) of primer (less water) as applied, and all values of G_i and G_a (as determined using the procedures specified in § 63.750 (e) and (f)) are less than or equal to 350 grams of organic VOC per liter (2.9 lb/gal) of primer (less water and exempt solvents) as applied.

(ii) If a control device is used:

(A) The overall control system efficiency, E_k , as determined using the procedures specified in § 63.750(g) for control systems containing carbon adsorbers and in § 63.750(h) for control systems with other control devices, is equal to or greater than 81% during the initial performance test and any subsequent performance test;

(B) If an incinerator other than a catalytic incinerator is used, the aver-

age combustion temperature for all 3-hour periods is greater than or equal to the average combustion temperature established under § 63.751(b)(11); and

(C) If a catalytic incinerator is used, the average combustion temperatures for all 3-hour periods are greater than or equal to the average combustion temperatures established under § 63.751(b)(12).

(iii)(A) Uses an application technique specified in § 63.745 (f)(1)(i) through (f)(1)(viii), or

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

(iv) Operates all application techniques in accordance with the manufacturer's specifications or locally prepared operating procedures, whichever is more stringent.

(4) The topcoat application operation is considered in compliance when the conditions specified in paragraphs (e)(4)(i) through (e)(4)(iv) of this section, as applicable, and in paragraph (f) of this section are met. Failure to meet any of the conditions identified in these paragraphs shall constitute non-compliance.

(i) For all uncontrolled topcoats, all values of H_i and H_a (as determined using the procedures specified in § 63.750(c) and (d)) are less than or equal to 420 grams organic HAP per liter (3.5 lb/gal) of topcoat (less water) as applied, and all values of G_i and G_a (as determined using the procedures specified in § 63.750(e) and (f)) are less than or equal to 420 grams organic VOC per liter (3.5 lb/gal) of topcoat (less water and exempt solvents) as applied.

(ii) If a control device is used,

(A) The overall control system efficiency, E_k , as determined using the procedures specified in § 63.750(g) for control systems containing carbon adsorbers and in § 63.750(h) for control systems with other control devices, is equal to or greater than 81% during the

initial performance test and any subsequent performance test;

(B) If an incinerator other than a catalytic incinerator is used, the average combustion temperature for all 3-hour periods is greater than or equal to the average combustion temperature established under § 63.751(b)(11); and

(C) If a catalytic incinerator is used, the average combustion temperatures for all 3-hour periods are greater than or equal to the average combustion temperatures established under § 63.751(b)(12).

(iii)(A) Uses an application technique specified in § 63.745 (f)(1)(i) through (f)(1)(viii); or

(B) Uses an alternative application technique, as allowed under § 63.745(f)(1)(ix), such that the emissions of both organic HAP and VOC for the implementation period of the alternative application method are less than or equal to the emissions generated using HVLP or electrostatic spray application methods as determined using the procedures specified in § 63.750(i).

(iv) Operates all application techniques in accordance with the manufacturer's specifications or locally prepared operating procedures.

(e) *Inorganic HAP emissions—primer and topcoat application operations.* For each primer or topcoat application operation that emits inorganic HAP, the operation is in compliance when:

(1) It is operated according to the requirements specified in § 63.745(g)(1) through (g)(3); and

(2) It is shut down immediately whenever the pressure drop or water flow rate is outside the limit(s) established for them and is not restarted until the pressure drop or water flow rate is returned within these limit(s), as required under § 63.745(g)(3).

(f) *Organic HAP emissions—Depainting operations—(1) Performance test periods.* When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When a carbon adsorber is used, each rolling material balance period is considered a performance test. Each 24-hour period is considered a performance test period for determining compliance with § 63.746(b)(1). For uncon-

trolled organic emissions from depainting operations, each calendar year is considered a performance test period for determining compliance with the HAP limits for organic HAP-containing chemical strippers used for spot stripping and decal removal.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in § 63.746(c), unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (2)(i) through (2)(vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g)(2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g)(3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) An organic HAP-containing chemical stripper depainting operation is considered in compliance when the conditions specified in paragraph (g)(3)(i) of this section are met.

(i) If a carbon adsorber (or other control device) is used, the overall control efficiency of the control system, as determined using the procedures specified in § 63.750(g) (or other control device as determined using the procedures specified in § 63.750(h)), is equal to or greater than 81% for control systems installed before the effective date, or equal to or greater than 95% for control systems installed on or after the effective date, during the initial performance test and all subsequent material balances (or performance tests, as appropriate).

(ii) For non-HAP depainting operations complying with § 63.746(b)(1);

(A) For any spot stripping and decal removal, the value of C, as determined using the procedures specified in § 63.750(j), is less than or equal to 26 gallons of organic HAP-containing chemical stripper or 190 pounds of organic HAP per commercial aircraft depainted calculated on a yearly average; and is less than or equal to 50 gallons of organic HAP-containing chemical stripper or 365 pounds of organic HAP per military aircraft depainted calculated on a yearly average; and

(B) The requirements of § 63.746(b)(2) are carried out during malfunctions of non-chemical based equipment.

(g) *Inorganic HAP emissions—depainting operations.* Each depainting operation is in compliance when:

(1) The operating requirements specified in § 63.746(b)(4) are followed; and

(2) It is shut down immediately whenever the pressure drop or water flow rate is outside the limit(s) established for them and is not restarted until the pressure drop or water flow

rate is returned within these limit(s), as required under § 63.746(b)(4)(v).

(h) *Chemical milling maskant application operations—(1) Performance test periods.* For uncontrolled chemical milling maskants that are not averaged, each 24-hour period is considered a performance test. For compliant and non-compliant chemical milling maskants that are averaged together, each 30-day period is considered a performance test, unless the permitting agency specifies a shorter period as part of an ambient ozone control program. When using a control device other than a carbon adsorber, three 1-hour runs constitute the test period for the initial and any subsequent performance test. When a carbon adsorber is used, each rolling material balance period is considered a performance test.

(2) *Initial performance tests.* If a control device is used, each owner or operator shall conduct an initial performance test to demonstrate compliance with the overall reduction efficiency specified in § 63.747(d), unless a waiver is obtained under either § 63.7(e)(2)(iv) or § 63.7(h). The initial performance test shall be conducted according to the procedures and test methods specified in § 63.7 and § 63.750(g) for carbon adsorbers and in § 63.750(h) for control devices other than carbon adsorbers. For carbon adsorbers, the initial performance test shall be used to establish the appropriate rolling material balance period for determining compliance. The procedures in paragraphs (h)(2) (i) through (vi) of this section shall be used in determining initial compliance with the provisions of this subpart for carbon adsorbers.

(i)(A) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to § 63.750(g) (2) or (4), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(B) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system

with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(ii) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(iii) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(iv) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(v) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(vi) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(3) The chemical milling maskant application operation is considered in compliance when the conditions specified in paragraphs (i)(3)(i) and (i)(3)(ii) of this section are met.

(i) For all uncontrolled chemical milling maskants, all values of H_i and H_a (as determined using the procedures specified in § 63.750 (k) and (l)) are less than or equal to 622 grams of organic HAP per liter (5.2 lb/gal) of Type I chemical milling maskant as applied (less water), and 160 grams of organic HAP per liter (1.3 lb/gal) of Type II chemical milling maskant as applied (less water). All values of G_i and G_a (as determined using the procedures specified in § 63.750 (m) and (n)) are less than or equal to 622 grams of VOC per liter (5.2 lb/gal) of Type I chemical milling maskant as applied (less water and exempt solvents), and 160 grams of VOC per liter (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.

(ii) If a carbon adsorber (or other control device) is used, the overall control efficiency of the control system, as determined using the procedures specified in § 63.750(g) (or systems with other control devices as determined using the procedures specified in § 63.750(h)), is equal to or greater than 81% during the initial performance test period and all subsequent material balances (or performance tests, as appropriate).

(i) *Handling and storage of waste.* For those wastes subject to this subpart, failure to comply with the requirements specified in § 63.748 shall be considered a violation.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15021, Mar. 27, 1998]

§ 63.750 Test methods and procedures.

(a) *Composition determination.* Compliance with the hand-wipe cleaning solvent approved composition list specified in § 63.744(b)(1) for hand-wipe cleaning solvents shall be demonstrated using data supplied by the manufacturer of the cleaning solvent. The data shall identify all components of the cleaning solvent and shall demonstrate that one of the approved composition definitions is met.

(b) *Vapor pressure determination.* The composite vapor pressure of hand-wipe cleaning solvents used in a cleaning operation subject to this subpart shall be determined as follows:

(1) For single-component hand-wipe cleaning solvents, the vapor pressure shall be determined using MSDS or other manufacturer's data, standard engineering reference texts, or other equivalent methods.

(2) The composite vapor pressure of a blended hand-wipe solvent shall be determined by quantifying the amount of each organic compound in the blend using manufacturer's supplied data or a gas chromatographic analysis in accordance with ASTM E 260-91 (incorporated by reference as specified in § 63.14 of subpart A of this part) and by calculating the composite vapor pressure of the solvent by summing the partial pressures of each component. The vapor pressure of each component shall be determined using manufacturer's data, standard engineering reference texts, or other equivalent methods. The following equation shall be used to determine the composite vapor pressure:

$$PP_c = \frac{\sum_{i=1}^n \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \sum_{i=1}^n \frac{W_e}{MW_e} + \sum_{i=1}^n \frac{W_i}{MW_i}}}{1}$$

where:

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W_i =Weight of the "i"th VOC compound, grams.

W_w =Weight of water, grams.

W_e =Weight of non-HAP, nonVOC compound, grams.

MW_i =Molecular weight of the "i"th VOC compound, g/g-mole.

MW_w =Molecular weight of water, g/g-mole.

MW_e =Molecular weight of exempt compound, g/g-mole.

PP_c =VOC composite partial pressure at 20 °C, mm Hg.

VP_i =Vapor pressure of the "i"th VOC compound at 20 °C, mm Hg.

(c) *Organic HAP content level determination—compliant primers and topcoats.* For those uncontrolled primers and topcoats complying with the primer and topcoat organic HAP content limits specified in §63.745(c) without being averaged, the following procedures shall be used to determine the mass of organic HAP emitted per volume of coating (less water) as applied.

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) For each coating formulation as applied, determine the organic HAP weight fraction, water weight fraction (if applicable), and density from manufacturer's data. If these values cannot be determined using the manufacturer's data, the owner or operator shall submit an alternative procedure for determining their values for approval by the Administrator. Recalculation is re-

quired only when a change occurs in the coating formulation.

(3) For each coating as applied, calculate the mass of organic HAP emitted per volume of coating (lb/gal) less water as applied using equations 1, 2, and 3:

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w} \quad \text{Eq. 1}$$

where

V_{wi} =volume (gal) of water in one gal of coating i.

D_{ci} =density (lb of coating per gal of coating) of coating i.

W_{wi} =weight fraction (expressed as a decimal) of water in coating i.

D_w =density of water, 8.33 lb/gal.

$$M_{Hi} = D_{ci} W_{Hi} \quad \text{Eq. 2}$$

where

M_{Hi} =mass (lb) of organic HAP in one gal of coating i.

D_{ci} =density (lb of coating per gal of coating) of coating i.

W_{Hi} =weight fraction (expressed as a decimal) of organic HAP in coating i.

$$H_i = \frac{M_{Hi}}{(1 - V_{wi})} \quad \text{Eq. 3}$$

where

H_i =mass of organic HAP emitted per volume of coating i (lb/gal) less water as applied.

M_{Hi} =mass (lb) of organic HAP in one gal of coating i.

V_{wi} =volume (gal) of water in one gal of coating i.

(d) *Organic HAP content level determination—averaged primers and topcoats.* For those uncontrolled primers and topcoats that are averaged together in order to comply with the primer and topcoat organic HAP content limits specified in §63.745(c), the following procedure shall be used to determine the monthly volume-weighted average mass of organic HAP emitted per volume of coating (less water) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1)(i) Determine the total organic HAP weight fraction as applied of each coating. If any ingredients, including

diluent solvent, are added to a coating prior to its application, the organic HAP weight fraction of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the total organic HAP weight fraction of each coating as applied each month.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the organic HAP content of the coating, the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the organic HAP content of the coating, the total organic HAP weight fraction of the coating shall be redetermined.

(iii) Manufacturer's formulation data may be used to determine the total organic HAP content of each coating and any ingredients added to the coating prior to its application. If the total organic HAP content cannot be determined using the manufacturer's data, the owner or operator shall submit an alternative procedure for determining the total organic HAP weight fraction for approval by the Administrator.

(2)(i) Determine the volume both in total gallons as applied and in total gallons (less water) as applied of each coating. If any ingredients, including diluent solvents, are added prior to its application, the volume of each coating shall be determined at a time and location in the process after all ingredients (including any diluent solvent) have been added.

(ii) Determine the volume of each coating (less water) as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(iii) The volume applied may be determined from company records.

(3)(i) Determine the density of each coating as applied. If any ingredients, including diluent solvent, are added to a coating prior to its application, the

density of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the density of each coating as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the density of the coating, then the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the density of the coating, then the density of the coating shall be redetermined.

(iii) The density may be determined from company records, including manufacturer's data sheets. If the density of the coating cannot be determined using the company's records, including the manufacturer's data, then the owner or operator shall submit an alternative procedure for determining the density for approval by the Administrator.

(4) Calculate the total volume in gallons as applied (less water) by summing the individual volumes of each coating (less water) as applied, which were determined under paragraph (d)(2) of this section.

(5) Calculate the volume-weighted average mass of organic HAP in coatings emitted per unit volume (lb/gal) of coating (less water) as applied during each 30-day period using equation 4:

$$H_a = \frac{\sum_{i=1}^n W_{Hi} D_{ci} V_{ci}}{C_{lw}} \quad \text{Eq. 4}$$

where

H_a = volume-weighted average mass of organic HAP emitted per unit volume of coating (lb/gal) (less water)

as applied during each 30-day period for those coatings being averaged.

n =number of coatings being averaged.

W_{Hi} =weight fraction (expressed as a decimal) of organic HAP in coating i as applied that is being averaged during each 30-day period.

D_{ci} =density (lb of coating per gal of coating) of coating i as applied that is being averaged during each 30-day period.

V_{ci} =volume (gal) of coating i as applied that is being averaged during the 30-day period.

C_{1w} =total volume (gal) of all coatings (less water) as applied that are being averaged during each 30-day period.

(e) *VOC content level determination—compliant primers and topcoats.* For those uncontrolled primers and topcoats complying with the primer and topcoat VOC content levels specified in § 63.745(c) without being averaged, the following procedure shall be used to determine the mass of VOC emitted per volume of coating (less water and exempt solvents) as applied.

(1) Determine the VOC content of each formulation (less water and exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A, to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) For each coating applied, calculate the mass of VOC emitted per volume of coating (lb/gal) (less water and exempt solvents) as applied using equations 5, 6, and 7:

$$V_{wi} = \frac{D_{ci} W_{wi}}{D_w} \quad \text{Eq. 5}$$

where

V_{wi} =volume (gal) of water in one gal of coating i .

D_{ci} =density (lb of coating per gal of coating) of coating i .

W_{wi} =weight fraction (expressed as a decimal) of water in coating i .

D_w =density of water, 8.33 lb/gal.

$$M_{vi} = D_{ci} W_{vi} \quad \text{Eq. 6}$$

where

M_{vi} =mass (lb) of VOC in one gal of coating i .

D_{ci} =density (lb of coating per gal of coating) of coating i .

W_{vi} =weight fraction (expressed as a decimal) of VOC in coating i .

$$G_i = \frac{M_{vi}}{(1 - V_{wi}) - V_{xi}} \quad \text{Eq. 7}$$

where

G_i =mass of VOC emitted per volume of coating i (lb/gal) (less water and exempt solvents) as applied.

M_{vi} =mass (lb) of VOC in one gal of coating i .

V_{wi} =volume (gal) of water in one gal of coating i .

V_{xi} =volume (gal) of exempt solvents in one gal of coating i .

(3)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_a , compliance shall be based, except as provided in paragraph (e)(3)(ii) of this section, upon the VOC content obtained using EPA Method 24.

(ii) If the VOC content of a coating obtained using Method 24 would indicate noncompliance as determined under either § 63.749 (d)(3)(i) or (d)(4)(i), an owner or operator may elect to average the coating with other uncontrolled coatings and (re)calculate G_i (using the procedure specified in paragraph (f) of this section), provided appropriate and sufficient records were maintained for all coatings included in the average (re)calculation. The (re)calculated value of G_i (G_a in paragraph (f)) for the averaged coatings

shall then be used to determine compliance.

(f) *VOC content level determination—averaged primers and topcoats.* For those uncontrolled primers and topcoats that are averaged within their respective coating category in order to comply with the primer and topcoat VOC content limits specified in §63.745 (c)(2) and (c)(4), the following procedure shall be used to determine the monthly volume-weighted average mass of VOC emitted per volume of coating (less water and exempt solvents) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1)(i) Determine the VOC content (lb/gal) as applied of each coating. If any ingredients, including diluent solvent, are added to a coating prior to its application, the VOC content of the coating shall be determined at a time and location in the process after all ingredients have been added.

(ii) Determine the VOC content of each coating as applied each month, unless the permitting agency specifies a shorter period as part of an ambient ozone control program.

(A) If no changes have been made to a coating, either as supplied or as applied, or if a change has been made that has a minimal effect on the VOC content of the coating, the value previously determined may continue to be used until a change in formulation has been made by either the manufacturer or the user.

(B) If a change in formulation or a change in the ingredients added to the coating takes place, including the ratio of coating to diluent solvent, prior to its application, either of which results in a more than minimal effect on the VOC content of the coating, the VOC content of the coating shall be redetermined.

(iii) Determine the VOC content of each primer and topcoat formulation (less water and exempt solvents) as applied using EPA Method 24 or from manufacturer's data.

(2)(i) Determine the volume both in total gallons as applied and in total gallons (less water and exempt solvents) as applied of each coating. If any ingredients, including diluent solvents, are added prior to its application, the

volume of each coating shall be determined at a time and location in the process after all ingredients (including any diluent solvent) have been added.

(ii) Determine the volume of each coating (less water and exempt solvents) as applied each day.

(iii) The volume applied may be determined from company records.

(3) Calculate the total volume in gallons (less water and exempt solvents) as applied by summing the individual volumes of each coating (less water and exempt solvents) as applied, which were determined under paragraph (f)(2) of this section.

(4) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of coating (less water and exempt solvents) as applied for each coating category during each 30-day period using equation 8:

$$G_a = \frac{\sum_{i=1}^n (\text{VOC})_{ci} V_{ci}}{C_{lws}} \quad \text{Eq. 8}$$

where

G_a =volume weighted average mass of VOC per unit volume of coating (lb/gal) (less water and exempt solvents) as applied during each 30-day period for those coatings being averaged.

n =number of coatings being averaged.

$(\text{VOC})_{ci}$ =VOC content (lb/gal) of coating i (less water and exempt solvents) as applied (as determined using the procedures specified in paragraph (f)(1) of this section) that is being averaged during the 30-day period.

V_{ci} =volume (gal) of coating i (less water and exempt solvents) as applied that is being averaged during the 30-day period.

C_{lws} =total volume (gal) of all coatings (less water and exempt solvents) as applied during each 30-day period for those coatings being averaged.

(5)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_a , recalculation of G_a is required using the new value. If more than one coating is involved, the

recalculation shall be made once using all of the new values.

(ii) If recalculation is required, an owner or operator may elect to include in the recalculation of G_a uncontrolled coatings that were not previously included provided appropriate and sufficient records were maintained for these other coatings to allow daily recalculations.

(iii) The recalculated value of G_a under either paragraph (f)(5)(i) or (f)(5)(ii) of this section shall be used to determine compliance.

(g) *Overall VOC and/or organic HAP control efficiency—carbon adsorber.* Each owner or operator subject to the requirements of § 63.745(d), § 63.746(c), or § 63.747(d) shall demonstrate initial compliance with the requirements of this subpart by following the procedures of paragraph (g)(1), (2), (3), (4), or (5) as applicable and paragraphs (6), (7), and (8) of this section. When an initial compliance demonstration is required by this subpart, the procedures in paragraphs (g)(9) through (g)(14) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) To demonstrate initial and continuous compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when emissions are controlled by a dedicated solvent recovery device, each owner or operator of the affected operation may perform a liquid-liquid HAP or VOC material balance over rolling 7- to 30-day periods in lieu of demonstrating compliance through the methods in paragraph (g)(2), (g)(3), or (g)(4) of this section. Results of the material balance calculations performed to demonstrate initial compliance shall be submitted to the Administrator with the notification of compliance status required by § 63.9(h) and by § 63.753 (c)(1)(iv), (d)(3)(i), and (e)(3). When demonstrating compliance by this procedure, § 63.7(e)(3) of subpart A does not apply. The amount of liquid HAP or VOC applied and recovered shall be determined as discussed in paragraph (g)(1)(iii) of this section. The overall HAP or VOC emission reduction (R) is calculated using equation 9:

$$R = \frac{M_r}{\sum_{i=1}^n [W_{oi} M_{ci} - RS_i]} \times 100 \quad \text{Eq. 9}$$

(i) The value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured RS_i value that is greater than zero:

- (A) Measurement techniques; and
- (B) Documentation that the measured value of RS_i exceeds zero.

(ii) The measurement techniques of paragraph (g)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of performance test required under § 63.7(b).

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (g)(1) of this section shall:

(A) Measure the amount of coating or stripper as applied;

(B) Determine the VOC or HAP content of all coating and stripper applied using the test method specified in § 63.750(c) (1) through (3) or (e) (1) and (2) of this section;

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the amount of HAP or VOC recovered by the solvent recovery device over rolling 7- to 30-day periods; the device shall be certified by the manufacturer to be accurate to within ± 2.0 percent, and this certification shall be kept on record;

(D) Measure the amount of HAP or VOC recovered; and

(E) Calculate the overall HAP or VOC emission reduction (R) for rolling 7- to 30-day periods using equation 9.

(F) Compliance is demonstrated if the value of R is equal to or greater than the overall HAP control efficiencies required by § 63.745(d), § 63.746(c), or § 63.747(d).

(2) To demonstrate initial compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when affected HAP emission points are controlled by an emission control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a

gaseous emission test using the following procedures.

(i) Construct the overall HAP emission reduction system so that all volumetric flow rates and total HAP or VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 63.750(g) (9) through (14).

(ii) Determine capture efficiency from the HAP emission points by capturing, venting, and measuring all HAP emissions from the HAP emission points. During a performance test, the owner or operator of affected HAP emission points located in an area with other gaseous emission sources not affected by this subpart shall isolate the affected HAP emission points from all other gaseous emission points by one of the following methods:

(A) Build a temporary total enclosure around the affected HAP emission point(s); or

(B) Shut down all gaseous emission points not affected by this subpart and continue to exhaust fugitive emissions from the affected HAP emission points through any building ventilation system and other room exhausts such as drying ovens. All ventilation air must be vented through stacks suitable for testing.

(iii) Operate the emission control device with all affected HAP emission points connected and operating.

(iv) Determine the efficiency (E) of the control device using equation 10:

(v) Determine the efficiency (F) of the capture system using equation 11:

$$E = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^P Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}} \quad \text{Eq. 10}$$

$$F = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^P Q_{fk} C_{fk}} \quad \text{Eq. 11}$$

(vi) For each HAP emission point subject to § 63.745(d), § 63.746(c), or § 63.747(d), compliance is demonstrated if the product of (E) × (F) is equal to or greater than the overall HAP control efficiencies required under § 63.745(d), § 63.746(c), or § 63.747(d).

(3) To demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when affected HAP emission points are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel, each owner or operator of an affected source shall perform a gaseous emission test using the following procedures:

(i) Construct the overall HAP emission reduction system so that each volumetric flow rate and the total HAP emissions can be accurately determined by the applicable test methods and procedures specified in § 63.750(g) (9) through (14);

(ii) Assure that all HAP emissions from the affected HAP emission point(s) are segregated from gaseous emission points not affected by this subpart and that the emissions can be captured for measurement, as described in paragraphs (g)(2)(ii) (A) and (B) of this section;

(iii) Operate the emission control device with all affected HAP emission points connected and operating;

(iv) Determine the efficiency (H_v) of each individual carbon adsorber vessel (v) using equation 12:

$$H_v = \frac{Q_{gv} C_{gv} - Q_{hv} C_{hv}}{Q_{gv} C_{gv}} \quad \text{Eq. 12}$$

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the individual carbon adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual carbon adsorber vessel (v) using equation 13:

$$H_{sys} = \frac{\sum_{v=1}^q H_v Q_{hv}}{\sum_{v=1}^q Q_{hv}} \quad \text{Eq. 13}$$

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(vi) Determine the efficiency (F) of the capture system using equation 11.

(vii) For each HAP emission point subject to § 63.745(d), § 63.746(c), or § 63.747(d), compliance is demonstrated if the product of $(H_{sys}) \times (F)$ is equal to or greater than the overall HAP control efficiency required by § 63.745(d), § 63.746(c), or § 63.747(d).

(4) An alternative method of demonstrating compliance with § 63.745(d), § 63.746(c), or § 63.747(d) is the installation of a total enclosure around the affected HAP emission point(s) and the ventilation of all HAP emissions from the total enclosure to a control device with the efficiency specified in paragraph (g)(4)(iii) of this section. If this method is selected, the compliance test methods described in paragraphs (g)(1), (g)(2), and (g)(3) of this section are not required. Instead, each owner or operator of an affected source shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (g)(4)(i) (A) through (D) of this section shall be considered a total enclosure. The owner or operator of an enclosure that does not meet these requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected HAP emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) The total area of all natural draft openings shall not exceed 5% of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(C) The average inward face velocity (FV) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(1) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified

in § 63.750(g) (10) and (11); volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(2) Determine FV by equation 14:

$$FV = \frac{\sum_{j=1}^n Q_{out\ j} - \sum_{i=1}^p Q_{in\ i}}{\sum_{k=1}^q A_k} \quad \text{Eq. 14}$$

(D) The air passing through all natural draft openings shall flow into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using equation 10 or equations 12 and 13, as applicable, and the test methods and procedures specified in § 63.750(g) (9) through (14).

(iii) Compliance shall be achieved if the installation of a total enclosure is demonstrated and the value of E determined from equation 10 (or the value of H_{sys} determined from equations 12 and 13, as applicable) is equal to or greater than the overall HAP control efficiencies required under § 63.745(d), § 63.746(c), or § 63.747(d).

(5) When nonregenerative carbon adsorbers are used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), the owner or operator may conduct a design evaluation to demonstrate initial compliance in lieu of following the compliance test procedures of paragraphs (g)(1), (2), (3), and (4) of this section. The design evaluation shall consider the vent stream composition, component concentrations, flow rate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon

bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and the emission point operating schedule.

(6)(i) To demonstrate initial compliance with § 63.745(d), § 63.746(c), or § 63.747(d) when hard piping or ductwork is used to direct VOC and HAP emissions from a VOC and HAP source to the control device, each owner or operator shall demonstrate upon inspection that the criteria of paragraph (g)(6)(i)(A) and paragraph (g)(6)(i)(B) or (C) of this section VR/FD are met.

(A) The equipment shall be vented to a control device.

(B) The control device efficiency (E or H_{sys} , as applicable) determined using equation 10 or equations 12 and 13, respectively, and the test methods and procedures specified in § 63.750(g) (9) through (14), shall be equal to or greater than the overall HAP control efficiency required by § 63.745(d), § 63.746(c), or § 63.747(d).

(C) When a nonregenerative carbon adsorber is used, the ductwork from the affected emission point(s) shall be vented to the control device and the carbon adsorber shall be demonstrated, through the procedures of § 63.750(g) (1), (2), (3), (4), or (5), to meet the requirements of § 63.745(d), § 63.746(c), or § 63.747(d).

(7) Startups and shutdowns are normal operation for this source category. Emissions from these activities are to be included when determining if the standards specified in § 63.745(d), § 63.746(c), or § 63.747(d) are being attained.

(8) An owner or operator who uses compliance techniques other than those specified in this subpart shall submit a description of those compliance procedures, subject to the Administrator's approval, in accordance with § 63.7(f) of subpart A.

(9) Either EPA Method 18 or EPA Method 25A of appendix A of part 60, as appropriate to the conditions at the site, shall be used to determine VOC and HAP concentration of air exhaust streams as required by § 63.750(g) (1) through (6). The owner or operator shall submit notice of the intended test method to the Administrator for ap-

proval along with the notification of the performance test required under § 63.7(b). Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (g)(9) (i) and (ii) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(i) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual carbon adsorber vessels pursuant to paragraph (g) (2) or (4) of this section, the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all of the individual carbon adsorber vessels.

(ii) When either EPA Method 18 or EPA Method 25A is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each carbon adsorber vessel pursuant to § 63.750(g) (3) or (4), each carbon adsorber vessel shall be tested individually. The test for each carbon adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(10) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(11) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(12) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(13) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(14) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(h) *Overall VOC and/or organic HAP control efficiency—control devices other than carbon adsorbers.* Calculate the overall control efficiency of a control system with a control device other than a carbon adsorber using the following procedure.

(1) Calculate the overall control efficiency using equation 15:

$$E_k = R_k F_k \quad \text{Eq. 15}$$

where

E_k =overall VOC and/or organic HAP control efficiency (expressed as a decimal) of control system k.

R_k =destruction or removal efficiency (expressed as a decimal) of total organic compounds or total organic HAP for control device k as determined under paragraph (h)(2) of this section.

F_k =capture efficiency (expressed as a decimal) of capture system k as determined under paragraph (h)(3) of this section.

(2) The organic HAP destruction or removal efficiency R_k of a control device other than a carbon adsorber shall be determined using the procedures described below. The destruction efficiency may be measured as either total organic HAP or as TOC minus methane and ethane according to these procedures.

(i) Use Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, to select the sampling sites.

(ii) Determine the gas volumetric flow rate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(iii) Use Method 18 of 40 CFR part 60, appendix A, to measure either TOC minus methane and ethane or total organic HAP. Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of this part may be used.

(iv) Use the following procedure to calculate the destruction or removal efficiency:

(A) The destruction or removal efficiency test shall consist of three runs. The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, the samples shall be taken at approximately equal intervals in time such as 15-minute intervals during the run.

(B) Calculate the mass rate of either TOC (minus methane and ethane) or total organic HAP (E_i , E_o using equations 16 and 17:

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} M_{ij} \right) Q_i \quad \text{Eq. 16}$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} M_{oj} \right) Q_o \quad \text{Eq. 17}$$

where

E_i , E_o =mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kg/hr.

K_2 =constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature for (gram-mole per standard cubic meter) is 20° C.

n =number of sample components in the gas stream.

C_{ij} , C_{oj} =concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

M_{ij} , M_{oj} =molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o =flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

(1) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by EPA Method 18 shall be summed using equation 16 in paragraph (h)(2)(iv)(B) of this section.

(2) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using equation 17 in paragraph (h)(2)(iv)(B) of this section. The list of organic HAP is provided in §63.104 of subpart F of this part.

(C) Calculate the destruction or removal efficiency for TOC (minus methane and ethane) or total organic HAP using equation 18:

$$R = \frac{E_i - E_o}{E_i} \times 100 \quad \text{Eq. 18}$$

where

R=destruction or removal efficiency of control device, percent.

E_i =mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (h)(2)(iv)(B) of this section, kg TOC per hour or kg organic HAP per hour.

E_o =mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph (h)(2)(iv)(B) of this section, kg TOC per hour or kg organic HAP per hour.

(3) Determine the capture efficiency F_k of each capture system to which organic HAP and VOC emissions from coating operations are vented. The capture efficiency value shall be determined using Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure as found in appendix B to § 52.741 of part 52 of this chapter for total enclosures, and the capture efficiency protocol specified in § 52.741(a)(4)(iii) of part 52 of this chapter for all other enclosures.

(i)(1) *Alternative application method—primers and topcoats.* Each owner or operator seeking to use an alternative application method (as allowed in § 63.745(f)(1)(ix)) in complying with the standards for primers and topcoats shall use the procedures specified in paragraphs (i)(2)(i) and (i)(2)(ii) or (i)(2)(iii) of this section to determine the organic HAP and VOC emission levels of the alternative application technique as compared to either HVLP or electrostatic spray application methods.

(2)(i) For the process or processes for which the alternative application method is to be used, the total organic HAP and VOC emissions shall be determined for an initial 30-day period, the period of time required to apply coating to five completely assembled aircraft, or a time period approved by the permitting agency. During this initial period, only HVLP or electrostatic spray application methods shall be

used. The emissions shall be determined based on the volumes, organic HAP contents (less water), and VOC contents (less water and exempt solvents) of the coatings as applied.

(ii) Upon implementation of the alternative application method, use the alternative application method in production on actual production parts or assemblies for a period of time sufficient to coat an equivalent amount of parts and assemblies with coatings identical to those used in the initial 30-day period. The actual organic HAP and VOC emissions shall be calculated for this post-implementation period.

(iii) Test the proposed application method against either HVLP or electrostatic spray application methods in a laboratory or pilot production area, using parts and coatings representative of the process(es) where the alternative method is to be used. The laboratory test will use the same part configuration(s) and the same number of parts for both the proposed method and the HVLP or electrostatic spray application methods.

(iv) Whenever the approach in either paragraph (i)(2)(ii) or (i)(2)(iii) of this section is used, the owner or operator shall calculate both the organic HAP and VOC emission reduction using equation:

$$P = \frac{E_b - E_3}{E_b} \times 100$$

where:

P=organic HAP or VOC emission reduction, percent.

E_b =organic HAP or VOC emissions, in pounds, before the alternative application technique was implemented, as determined under paragraph (i)(2)(i) of this section.

E_a =organic HAP or VOC emissions, in pounds, after the alternative application technique was implemented, as determined under paragraph (i)(2)(ii) of this section.

(3) Each owner or operator seeking to demonstrate that an alternative application method achieves emission reductions equivalent to HVLP or electrostatic spray application methods shall comply with the following:

(i) Each coating shall be applied such that the dried film thickness is within

the range specified by the applicable specification(s) for the aerospace vehicle or component being coated.

(ii) If no such dried film thickness specification(s) exists, the owner or operator shall ensure that the dried film thickness applied during the initial 30-day period is equivalent to the dried film thickness applied during the alternative application method test period for similar aerospace vehicles or components.

(iii) Failure to comply with these dried film thickness requirements shall invalidate the test results obtained under paragraph (i)(2)(i) of this section.

(j) *Spot stripping and decal removal.* Each owner or operator seeking to comply with § 63.746(b)(3) shall determine the volume of organic HAP-containing chemical strippers or alternatively the weight of organic HAP used per aircraft using the procedure specified in paragraphs (j)(1) through (j)(3) of this section.

(1) For each chemical stripper used for spot stripping and decal removal, determine for each annual period the total volume as applied or the total weight of organic HAP using the procedure specified in paragraph (d)(2) of this section.

(2) Determine the total number of aircraft for which depainting operations began during the annual period as determined from company records.

(3) Calculate the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used for spot stripping and decal removal per aircraft using equation 20 (volume) or equation 21 (weight):

$$C = \frac{\sum_{i=1}^n V_{si}}{A} \quad \text{Eq. 20}$$

where:

C=annual average volume (gal per aircraft) of organic HAP-containing chemical stripper used for spot stripping and decal removal.

n=number of organic HAP-containing chemical strippers used in the annual period.

V_{si} =volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A=number of aircraft for which depainting operations began during the annual period.

$$C = \frac{\sum_{i=1}^n \left(V_{si} D_{hi} \left(\sum_{i=1}^m W_{hi} \right) \right)}{A} \quad \text{Eq. 21}$$

where:

C = annual average weight (lb per aircraft) of organic HAP (chemical stripper) used for spot stripping and decal removal.

m = number of organic HAP contained in each chemical stripper, as applied.

n = number of organic HAP-containing chemical strippers used in the annual period.

W_{hi} = weight fraction (expressed as a decimal) of each organic HAP (i) contained in the chemical stripper, as applied, for each aircraft depainted.

D_{hi} = density (lb/gal) of each organic HAP-containing chemical stripper (i), used in the annual period.

V_{si} = volume (gal) of organic HAP-containing chemical stripper (i) used during the annual period.

A = number of aircraft for which depainting operations began during the annual period.

(k) *Organic HAP content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant organic HAP content limit specified in § 63.747(c)(1) without being averaged, the following procedures shall be used to determine the mass of organic HAP emitted per unit volume of coating (chemical milling maskant) i as applied (less water), H_i (lb/gal).

(1) For coatings that contain no exempt solvents, determine the total organic HAP content using manufacturer's supplied data or Method 24 of 40 CFR part 60, appendix A to determine the VOC content. The VOC content shall be used as a surrogate for total HAP content for coatings that contain no exempt solvent. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall

be based on the results from the Method 24 analysis.

When Method 24 is used to determine the VOC content of water-reducible coatings, the precision adjustment factors in Reference Method 24 shall be used. If the adjusted analytical VOC content is less than the formulation solvent content, then the analytical VOC content should be set equal to the formulation solvent content.

(2) [Reserved]

(l) *Organic HAP content level determination—averaged chemical milling maskants.* For those uncontrolled chemical milling maskants that are averaged together in order to comply with the chemical milling maskant organic HAP content level specified in § 63.747(c)(1), the procedure specified in paragraphs (l)(1) through (l)(4) of this section shall be used to determine the monthly volume-weighted average mass of organic HAP emitted per volume of chemical milling maskant (less water) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1) Determine the total organic HAP weight fraction as applied of each chemical milling maskant used during each 30-day period using the procedure specified in paragraph (d)(1) of this section.

(2) Determine for each 30-day period:

(i) The individual volume of each chemical milling maskant applied in terms of total gallons (less water) (using the procedure specified in paragraph (d)(2) of this section), and

(ii) The total volume in gallons of all chemical milling maskants (less water) as applied by summing the individual volumes of each chemical milling maskant as applied (less water).

(3) Determine the density of each chemical milling maskant as applied used during each 30-day period using the procedure specified in paragraph (d)(3) of this section.

(4) Calculate the volume-weighted average mass of organic HAP emitted per unit volume (lb/gal) of chemical milling maskant (less water) as applied for all chemical milling maskants during each 30-day period using equation 22:

$$H_a = \frac{\sum_{i=1}^n W_{Hi} D_{mi} V_{mi}}{M_{lw}} \quad \text{Eq. 22}$$

where

H_a =volume-weighted mass of organic HAP emitted per unit volume of chemical milling maskants (lb/gal) (less water) as applied during each 30-day period for those chemical milling maskants being averaged.

n =number of chemical milling maskants being averaged.

W_{Hi} =weight fraction (expressed as a decimal) of organic HAP in chemical milling maskant i (less water) as applied during each 30-day period that is averaged.

D_{mi} =density (lb chemical milling maskant per gal coating) of chemical milling maskant i as applied during each 30-day period that is averaged.

V_{mi} =volume (gal) of chemical milling maskant i (less water) as applied during the 30-day period that is averaged.

M_{lw} =total volume (gal) of all chemical milling maskants (less water) as applied during each 30-day period that is averaged.

(m) *VOC content level determination—compliant chemical milling maskants.* For those uncontrolled chemical milling maskants complying with the chemical milling maskant VOC content limit specified in § 63.747(c)(2) without being averaged, the procedure specified in paragraphs (m)(1) and (m)(2) of this section shall be used to determine the mass of VOC emitted per volume of chemical milling maskant (less water and exempt solvents) as applied.

(1) Determine the mass of VOC emitted per unit volume of chemical milling maskant (lb/gal) (less water and exempt solvents) as applied, G_i , for each chemical milling maskant using the procedures specified in paragraphs (e)(1) and (e)(2) of this section.

(2)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_i , compliance shall be based, except as provided in paragraph (m)(2)(ii) of this section, upon

the VOC content obtained using EPA Method 24.

(ii) If the VOC content of a chemical milling maskant obtained using EPA Method 24 would indicate noncompliance as determined under § 63.749(h)(3)(i), an owner or operator may elect to average the chemical milling maskant with other uncontrolled chemical milling maskants and (re)calculate G_a (using the procedure specified in paragraph (n) of this section), provided appropriate and sufficient records were maintained for all chemical milling maskants included in the average recalculation. The (re)calculated value of G_a for the averaged chemical milling maskants shall then be used to determine compliance.

(n) *VOC content level determination—averaged chemical milling maskants.* For those uncontrolled chemical milling maskants that are averaged together in order to comply with the chemical milling maskant VOC content limit specified in § 63.747(c)(2), the procedure specified in paragraphs (n)(1) through (n)(4) of this section shall be used to determine the monthly volume-weighted average mass of VOC emitted per volume of chemical milling maskant (less water and exempt solvents) as applied, unless the permitting agency specifies a shorter averaging period as part of an ambient ozone control program.

(1) Determine the VOC content of each chemical milling maskant (less water and exempt solvents) as applied used during each 30-day period using the procedure specified in paragraph (f)(1) of this section.

(2)(i) Determine the individual volume of each chemical milling maskant applied in terms of total gallons (less water and exempt solvents) using the procedure specified in paragraph (f)(2) of this section, and

(ii) Calculate the total volume in gallons of all chemical milling maskants (less water and exempt solvents) as applied by summing the individual volumes of each chemical milling maskant (less water and exempt solvents) as applied.

(3) Calculate the volume-weighted average mass of VOC emitted per unit volume (lb/gal) of chemical milling maskant (less water and exempt sol-

vents) as applied during each 30-day period using equation 23:

$$G_a = \frac{\sum_{i=1}^n (\text{VOC})_{mi} V_{mi}}{M_{\text{Iwes}}} \quad \text{Eq. 23}$$

where

G_a =volume-weighted average mass of VOC per unit volume of chemical milling maskant (lb/gal) (less water and exempt solvents) as applied during each 30-day period for those chemical milling maskants that are averaged.

n =number of chemical milling maskants being averaged.

$(\text{VOC})_{mi}$ =VOC content (lb/gal) of chemical milling maskant i (less water and exempt solvents) as applied during the 30-day period that is averaged.

V_{mi} =volume (gal) of chemical milling maskant i (less water and exempt solvents) as applied during the 30-day period that is averaged.

M_{Iwes} =total volume (gal) of all chemical milling maskants (less water and exempt solvents) as applied during each 30-day period that is averaged.

(4)(i) If the VOC content is found to be different when EPA Method 24 is used during an enforcement inspection from that used by the owner or operator in calculating G_a , recalculation of G_a is required using the new value. If more than one chemical milling maskant is involved, the recalculation shall be made once using all of the new values.

(ii) If recalculation is required, an owner or operator may elect to include in the recalculation of G_a uncontrolled chemical milling maskants that were not previously included provided appropriate and sufficient records were maintained for these other chemical milling maskants to allow daily recalculations.

(iii) The recalculated value of G_a under either paragraph (n)(4)(i) or (n)(4)(ii) of this section shall be used to determine compliance.

(o) *Inorganic HAP emissions—dry particulate filter certification requirements.* Dry particulate filters used to comply with § 63.745(g)(2) or § 63.746(b)(4) must be certified by the filter manufacturer

or distributor, paint/depainting booth supplier, and/or the facility owner or operator using method 319 in appendix A of subpart A of this part, to meet or exceed the efficiency data points found in Tables 1 and 2, or 3 and 4 of § 63.745 for existing or new sources respectively.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15021, Mar. 27, 1998]

§ 63.751 Monitoring requirements.

(a) *Enclosed spray gun cleaners.* Each owner or operator using an enclosed spray gun cleaner under § 63.744(c)(1) shall visually inspect the seals and all other potential sources of leaks associated with each enclosed gun spray cleaner system at least once per month. Each inspection shall occur while the system is in operation.

(b) *Incinerators and carbon adsorbers—initial compliance demonstrations.* Each owner or operator subject to the requirements in this subpart must demonstrate initial compliance with the requirements of § 63.745(d), § 63.746(c), and § 63.747(d) of this subpart. Each owner or operator using a carbon adsorber to comply with the requirements in this subpart shall comply with the requirements specified in paragraphs (b)(1) through (b)(7) of this section. Each owner or operator using an incinerator to comply with the requirements in this subpart shall comply with the requirements specified in paragraphs (b)(9) through (b)(12) of this section.

(1) Except as allowed by paragraph (b)(2) or (b)(5) of this section, for each control device used to control organic HAP or VOC emissions, the owner or operator shall fulfill the requirements of paragraph (b)(1) (i) or (ii) of this section.

(i) The owner or operator shall establish as a site-specific operating parameter the outlet total HAP or VOC concentration that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d) as appropriate; or

(ii) The owner or operator shall establish as the site-specific operating parameter the control device efficiency that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d).

(iii) When a nonregenerative carbon adsorber is used to comply with

§ 63.745(d), § 63.746(c), or § 63.747(d), the site-specific operating parameter value may be established as part of the design evaluation used to demonstrate initial compliance. Otherwise, the site-specific operating parameter value shall be established during the initial performance test conducted according to the procedures of § 63.750(g).

(2) For each nonregenerative carbon adsorber, in lieu of meeting the requirements of § 63.751(b)(1), the owner or operator may establish as the site-specific operating parameter the carbon replacement time interval, as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval shall be established either as part of the design evaluation to demonstrate initial compliance or during the initial performance test conducted according to the procedures in § 63.750(g) (1), (2), (3), or (4).

(3) Each owner or operator venting solvent HAP emissions from a source through a room, enclosure, or hood, to a control device to comply with § 63.745(d), § 63.746(c), or § 63.747(d) shall:

(i) Submit to the Administrator with the compliance status report required by § 63.9(h) of the General Provisions a plan that:

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained;

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance; and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d), as appropriate; and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(4) Owners or operators subject to § 63.751(b) (1), (2), or (3) shall calculate the site-specific operating parameter value, or range of values, as the arithmetic average of the maximum and/or minimum operating parameter values,

as appropriate, that demonstrate compliance with § 63.745(d), § 63.746(c), or § 63.747(d) during the multiple test runs required by § 63.750 (g)(2) and (g)(1).

(5) For each solvent recovery device used to comply with § 63.745(d), § 63.746(c), or § 63.747(d), in lieu of meeting the requirements of paragraph (b)(1) of this section, the results of the material balance calculation conducted in accordance with § 63.750(g)(1) may serve as the site-specific operating parameter that demonstrates compliance with § 63.745(d), § 63.746(c), or § 63.747(d).

(6) *Continuous compliance monitoring.* Following the date on which the initial compliance demonstration is completed, continuous compliance with § 63.745(d), § 63.746(c), or § 63.747(d) of this subpart shall be demonstrated as outlined in this paragraph.

(i) Each owner or operator of an affected source subject to § 63.745(d), § 63.746(c), or § 63.747(d) of this subpart shall monitor the applicable parameters specified in paragraph (b)(6)(ii), (b)(6)(iii), or (b)(6)(iv) of this section depending on the type of control technique used.

(ii) Compliance monitoring shall be subject to the following provisions:

(A) Except as allowed by paragraph (b)(6)(iii)(A)(2) of this section, all continuous emission monitors shall comply with performance specification (PS) 8 or 9 in 40 CFR part 60, appendix B, as appropriate depending on whether VOC or HAP concentration is being measured. The requirements in appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators shall challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(B) If the effluent from multiple emission points are combined prior to being channeled to a common control device, the owner or operator is required only to monitor the common control device, not each emission point.

(iii) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a control device and establishing a site-specific operating parameter in accordance with paragraph (b)(1) of this section shall fulfill

the requirements of paragraph (b)(6)(iii)(A) of this section and paragraph (b)(6)(iii)(B) or (C) of this section, as appropriate.

(A) The owner or operator shall install, calibrate, operate, and maintain a continuous emission monitor.

(1) The continuous emission monitor shall be used to measure continuously the total HAP or VOC concentration at both the inlet and the outlet whenever HAP from coating and paint stripping operations are vented to the control device, or when continuous compliance is demonstrated through a percent efficiency calculation; or

(2) For owners or operators using a nonregenerative carbon adsorber, in lieu of using continuous emission monitors as specified in paragraph (b)(6)(iii)(A)(1) of this section, the owner or operator may use a portable monitoring device to monitor total HAP or VOC concentration at the inlet and outlet or the outlet of the carbon adsorber as appropriate.

(a) The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications.

(b) The monitoring device shall meet the requirements of part 60, appendix A, Method 21, sections 2, 3, 4.1, 4.2, and 4.4. The calibration gas shall either be representative of the compounds to be measured or shall be methane, and shall be at a concentration associated with 125% of the expected organic compound concentration level for the carbon adsorber outlet vent.

(c) The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement.

(B) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a carbon adsorption system with a common exhaust stack for all of the carbon vessels, the owner or operator shall not operate the control device at an average control efficiency less than that required by § 63.745(d), § 63.746(c), or § 63.747(d) for three consecutive adsorption cycles.

(C) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a carbon adsorption system with individual exhaust stacks for each of the multiple carbon adsorber vessels, the owner or operator shall not operate any carbon adsorber vessel at an average control efficiency less than that required by § 63.745(d), § 63.746(c), or § 63.747(d) as calculated daily using a 7 to 30-day rolling average.

(D) If complying with § 63.745(d), § 63.746(c), or § 63.747(d) through the use of a nonregenerative carbon adsorber, in lieu of the requirements of paragraph (b)(6)(iii)(B) or (C) of this section, the owner or operator may replace the carbon in the carbon adsorber system with fresh carbon at a regular predetermined time interval as determined in accordance with paragraph (b)(2) of this section.

(iv) Owners or operators complying with § 63.745(d), § 63.746(c), or § 63.747(d) by capturing emissions through a room, enclosure, or hood shall install, calibrate, operate, and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with paragraph (b)(3) of this section whenever VOC and HAP from coating and stripper operations are vented through the capture device. The capture device shall not be operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with paragraph (b)(3) of this section for any 3-hour period.

(7) Owners or operators complying with paragraph (b)(4) or (b)(5) of this section shall calculate the site-specific operating parameter value as the arithmetic average of the minimum operating parameter values that demonstrate compliance with § 63.745(d) and § 63.747(d) during the three test runs required by § 63.750(h)(2)(iv).

(8) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications. Every 3 months, facilities shall replace the temperature sensors or have the temperature sensors recalibrated. As an alternative, a facility may use a continuous emission monitoring system (CEMS) to verify that

there has been no change in the destruction efficiency and effluent composition of the incinerator.

(9) Where an incinerator other than a catalytic incinerator is used, a thermocouple equipped with a continuous recorder shall be installed and continuously operated in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(10) Where a catalytic incinerator is used, thermocouples, each equipped with a continuous recorder, shall be installed and continuously operated in the gas stream immediately before and after the catalyst bed.

(11) For each incinerator other than a catalytic incinerator, each owner or operator shall establish during each performance test during which compliance is demonstrated, including the initial performance test, the minimum combustion temperature as a site-specific operating parameter. This minimum combustion temperature shall be the operating parameter value that demonstrates compliance with § 63.745(d) and § 63.747(d).

(12) For each catalytic incinerator, each owner or operator shall establish during each performance test during which compliance is demonstrated, including the initial performance test, the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed as site-specific operating parameters. These minimum temperatures shall be the operating parameter values that demonstrate compliance with § 63.745(d) and § 63.747(d).

(c) *Dry particulate filter, HEPA filter, and waterwash systems—primer and topcoat application operations.* (1) Each owner or operator using a dry particulate filter system to meet the requirements of § 63.745(g)(2) shall, while primer or topcoat application operations are occurring, continuously monitor the pressure drop across the system and read and record the pressure drop once per shift following the record-keeping requirements of § 63.752(d).

(2) Each owner or operator using a waterwash system to meet the requirements of § 63.745(g)(2) shall, while primer or topcoat application operations are occurring, continuously monitor

the water flow rate through the system, and read and record the water flow rate once per shift following the recordkeeping requirements of § 63.752(d).

(d) *Particulate filters and waterwash booths—depainting operations.* Each owner or operator using a dry particulate filter or waterwash system in accordance with the requirements of § 63.746(b)(4) shall, while depainting operations are occurring, continuously monitor the pressure drop across the particulate filters or the water flow rate through the waterwash system and read and record the pressure drop or the water flow rate once per shift following the recordkeeping requirements of § 63.752(e).

(e) *Use of an alternative monitoring method.* (1) *General.* Until permission to use an alternative monitoring method has been granted by the Administrator under this paragraph, the owner or operator of an affected source shall remain subject to the requirements of this section.

(2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this section including, but not limited to, the following:

(i) Alternative monitoring requirements when the affected source is infrequently operated; or

(ii) Alternative locations for installing continuous monitoring systems when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements; or

(iii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified in this section.

(3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section. If the results of the specified and the alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.

(4)(i) *Request to use alternative monitoring method.* An owner or operator who wishes to use an alternative monitoring method shall submit an application to the Administrator as described in paragraph (e)(4)(ii) of this section. The application may be submitted at any time provided that the monitoring method is not used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring method is to be used to demonstrate compliance with a relevant standard, the application shall be submitted not later than with the site-specific test plan required in § 63.7(c) (if requested) or with the site-specific performance evaluation plan (if requested), or at least 60 days before the performance evaluation is scheduled to begin.

(ii) The application shall contain a description of the proposed alternative monitoring system and information justifying the owner's or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.

(iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (e)(4)(i) of this section to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this subpart.

(5) *Approval of request to use alternative monitoring method.* (i) The Administrator will notify the owner or operator of his/her intention to deny approval of the request to use an alternative monitoring method within 60 calendar days after receipt of the original request and within 60 calendar days after receipt of any supplementary information that is submitted. If notification of intent to deny approval is not received within 60 calendar days, the alternative monitoring method is to be considered approved. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intent to disapprove the request together with:

(A) Notice of the information and findings on which the intended disapproval is based; and

(B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.

(ii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (e)(5)(i) of this section, the owner or operator of such source shall continue to use the alternative monitoring method until approval is received from the Administrator to use another monitoring method as allowed by paragraph (e) of this section.

(f) *Reduction of monitoring data.* (1) The data may be recorded in reduced or nonreduced form (e.g., parts per million (ppm) pollutant and % O₂ or nanograms per Joule (ng/J) of pollutant).

(2) All emission data shall be converted into units specified in this subpart for reporting purposes. After conversion into units specified in this subpart, the data may be rounded to the same number of significant digits as used in this subpart to specify the emission limit (e.g., rounded to the nearest 1% overall reduction efficiency).

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15023, Mar. 27, 1998]

§ 63.752 Recordkeeping requirements.

(a) *General.* Each owner or operator of a source subject to this subpart shall fulfill all recordkeeping requirements specified in § 63.10 (a), (b), (d), and (f).

(b) *Cleaning operation.* Each owner or operator of a new or existing cleaning operation subject to this subpart shall record the information specified in paragraphs (b)(1) through (b)(5) of this section, as appropriate.

(1) The name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility.

(2) For each cleaning solvent used in hand-wipe cleaning operations that complies with the composition requirements specified in § 63.744(b)(1) or for semi-aqueous cleaning solvents used for flush cleaning operations:

(i) The name of each cleaning solvent used;

(ii) All data and calculations that demonstrate that the cleaning solvent complies with one of the composition requirements; and

(iii) Annual records of the volume of each solvent used, as determined from facility purchase records or usage records.

(3) For each cleaning solvent used in hand-wipe cleaning operations that does not comply with the composition requirements in § 63.744(b)(1), but does comply with the vapor pressure requirement in § 63.744(b)(2):

(i) The name of each cleaning solvent used;

(ii) The composite vapor pressure of each cleaning solvent used;

(iii) All vapor pressure test results, if appropriate, data, and calculations used to determine the composite vapor pressure of each cleaning solvent; and

(iv) The amount (in gallons) of each cleaning solvent used each month at each operation.

(4) For each cleaning solvent used for the exempt hand-wipe cleaning operations specified in § 63.744(e) that does not conform to the vapor pressure or composition requirements of § 63.744(b):

(i) The identity and amount (in gallons) of each cleaning solvent used each month at each operation; and

(ii) A list of the processes set forth in § 63.744(e) to which the cleaning operation applies.

(5) A record of all leaks from enclosed spray gun cleaners identified pursuant to § 63.751(a) that includes for each leak found:

(i) Source identification;

(ii) Date leak was discovered; and

(iii) Date leak was repaired.

(c) *Primer and topcoat application operations—organic HAP and VOC.* Each owner or operator required to comply with the organic HAP and VOC content limits specified in § 63.745(c) shall record the information specified in paragraphs (c)(1) through (c)(6) of this section, as appropriate.

(1) The name and VOC content as received and as applied of each primer and topcoat used at the facility.

(2) For uncontrolled primers (organic HAP content less than 350 g/l (2.9 lb/gal) less water as applied and VOC content less than 350 g/l (2.9 lb/gal) less water and exempt solvents as applied) and topcoats that meet the organic HAP and VOC content limits in § 63.745(c)(1) through (c)(4) without averaging:

(i) The mass of organic HAP emitted per unit volume of coating as applied (less water) (H_i) and the mass of VOC emitted per unit volume of coating as applied (less water and exempt solvents) (G_i) for each coating formulation within each coating category used each month (as calculated using the procedures specified in § 63.750(c) and (e));

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of H_i and G_i ; and

(iii) The volume (gal) of each coating formulation within each coating category used each month.

(3) For "low HAP content" uncontrolled primers with organic HAP content less than or equal to 250 g/l (2.1 lb/gal) less water as applied and VOC content less than or equal to 250 g/l (2.1 lb/gal) less water and exempt solvents as applied:

(i) Annual purchase records of the total volume of each primer purchased; and

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the organic HAP and VOC content as applied. These records shall consist of the manufacturer's certification when the primer is applied as received, or the data and calculations used to determine H_i if not applied as received.

(4) For primers and topcoats complying with the organic HAP or VOC content level by averaging:

(i) The monthly volume-weighted average masses of organic HAP emitted per unit volume of coating as applied (less water) (H_a) and of VOC emitted per unit volume of coating as applied (less water and exempt solvents) (G_a) for all coatings (as determined by the procedures specified in § 63.750(d) and (f)); and

(ii) All data, calculations, and test results (including EPA Method 24 results) used to determine the values of H_a and G_a .

(5) For primers and topcoats that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) If an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded under § 63.751(b)(9) and all calculated 3-hour averages of the firebox temperature; and

(iii) If a catalytic incinerator is used, continuous records of the temperature recorded under § 63.751(b)(10) and all calculated 3-hour averages of the recorded temperatures.

(6) For primer and topcoats that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(d) *Primer and topcoat application operations—inorganic HAP emissions.* (1) Each owner or operator complying with § 63.745(g) for the control of inorganic HAP emissions from primer and topcoat application operations through the use of a dry particulate filter system or a HEPA filter system shall

record the pressure drop across the operating system once each shift during which coating operations occur.

(2) Each owner or operator complying with §63.745(g) through the use of a waterwash system shall record the water flow rate through the operating system once each shift during which coating operations occur.

(3) This log shall include the acceptable limit(s) of pressure drop or water flow rate, as applicable, as specified by the filter or booth manufacturer or in locally prepared operating procedures.

(e) *Depainting operations.* Each owner or operator subject to the depainting standards specified in §63.746 shall record the information specified in paragraphs (e)(1) through (e)(7) of this section, as appropriate.

(1) *General.* For all chemical strippers used in the depainting operation:

(i) The name of each chemical stripper; and

(ii) Monthly volumes of each organic HAP containing chemical stripper used or monthly weight of organic HAP-material used for spot stripping and decal removal.

(2) For HAP-containing chemical strippers that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in §63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in §63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(3) For HAP-containing chemical strippers that are controlled by a con-

trol device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in §63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) [Reserved]

(4) For each type of aircraft depainted at the facility, a listing of the parts, subassemblies, and assemblies normally removed from the aircraft before depainting. Prototype, test model or aircraft that exist in low numbers (i.e., less than 25 aircraft of any one type) are exempt from this requirement.

(5) *Non-chemical based equipment.* If dry media blasting equipment is used to comply with the organic HAP emission limit specified in §63.746(b)(1):

(i) The names and types of non-chemical based equipment; and

(ii) For periods of malfunction,

(A) The non-chemical method or technique that malfunctioned;

(B) The date that the malfunction occurred;

(C) A description of the malfunction;

(D) The methods used to depaint aerospace vehicles during the malfunction period;

(E) The dates that these methods were begun and discontinued; and

(F) The date that the malfunction was corrected.

(6) *Spot stripping and decal removal.* For spot stripping and decal removal, the volume of organic HAP-containing chemical stripper or weight of organic HAP used, the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used per aircraft, the annual number of aircraft stripped, and all data and calculations used.

(7) *Inorganic HAP emissions.* The actual pressure drop across the particulate filters or the visual continuity of the water curtain and water flow rate for waterwash systems, once each shift in which the depainting process is in operation. This log shall include the acceptable limit(s) of the pressure drop as specified by the filter manufacturer and the visual continuity of the water curtain and water flow rate for waterwash systems as specified by the

booth manufacturer or in locally prepared operating procedures.

(f) *Chemical milling maskant application operations.* Each owner or operator seeking to comply with the organic HAP and VOC content limits for the chemical milling maskant application operation, as specified in § 63.747(c), or the control system requirements specified in § 63.747(d), shall record the information specified in paragraphs (f)(1) through (f)(4) of this section, as appropriate.

(1) For uncontrolled chemical milling maskants that meet the organic HAP or VOC content limit without averaging:

(i) The mass of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) (H_i) and the mass of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) (G_i) for each chemical milling maskant formulation used each month (as determined by the procedures specified in § 63.750 (k) and (m));

(ii) All data, calculations, and test results (including EPA Method 24 results) used in determining the values of H_i and G_i ; and

(iii) The volume (gal) of each chemical milling maskant formulation used each month.

(2) For chemical milling maskants complying with the organic HAP or VOC content level by averaging:

(i) The monthly volume-weighted average masses of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) (H_a) and of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) (G_a) for all chemical milling maskants (as determined by the procedures specified in § 63.750 (l) and (n)); and

(ii) All data, calculations, and test results (including EPA Method 24 results) used to determine the values of H_a and G_a .

(3) For chemical milling maskants that are controlled by a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining

the overall control efficiency. The length of the rolling material balance period and all data and calculations used for determining this rolling period. The record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered; or

(ii) For nonregenerative carbon adsorbers, the overall control efficiency of the control system (as determined using the procedures specified in § 63.750(g)) and all test results, data, and calculations used in determining the overall control efficiency. The record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.

(4) For chemical milling maskants that are controlled by a control device other than a carbon adsorber:

(i) The overall control efficiency of the control system (as determined using the procedures specified in § 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency;

(ii) If an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded under § 63.751(b)(9) and all calculated 3-hour averages of the firebox temperature; and

(iii) If a catalytic incinerator is used, continuous records of the temperature recorded under § 63.751(b)(10) and all calculated 3-hour averages of the recorded temperatures.

[60 FR 45956, Sept. 1, 1996, as amended at 63 FR 15023, Mar. 27, 1998]

§ 63.753 Reporting requirements.

(a)(1) Except as provided in paragraphs (a)(2) and (a)(3) of this section, each owner or operator subject to this subpart shall fulfill the requirements contained in § 63.9(a) through (e) and (h) through (j), Notification requirements, and § 63.10(a), (b), (d), and (f), Recordkeeping and reporting requirements, of the General Provisions, 40 CFR part 63, subpart A, and that the initial notification for existing sources required in § 63.9(b)(2) shall be submitted not later than September 1, 1997. In addition to the requirements of § 63.9(h), the notification of compliance status shall include:

(i) Information detailing whether the source has operated within the specified ranges of its designated operating parameters.

(ii) For each coating line, where averaging will be used along with the types of quantities of coatings the facility expects to use in the first year of operation. Averaging scheme shall be approved by the Administrator or delegated State authority and shall be included as part of the facility's title V or part 70 permit.

(2) The initial notification for existing sources, required in § 63.9(b)(2) shall be submitted no later than September 1, 1997. For the purposes of this subpart, a title V or part 70 permit application may be used in lieu of the initial notification required under § 63.9(b)(2), provided the same information is contained in the permit application as required by § 63.9(b)(2), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

(3) For the purposes of this subpart, the Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment to a particular time period or postmark deadline submitted under § 63.9(i) within 30 calendar days of receiving sufficient information to evaluate the request, rather than 15 calendar days as provided for in § 63.9(i)(3).

(b) *Cleaning operation.* Each owner or operator of a cleaning operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) Any instance where a noncompliant cleaning solvent is used for a non-exempt hand-wipe cleaning operation;

(ii) A list of any new cleaning solvents used for hand-wipe cleaning in the previous 6 months and, as appropriate, their composite vapor pressure or notification that they comply with

the composition requirements specified in § 63.744(b)(1);

(iii) Any instance where a noncompliant spray gun cleaning method is used;

(iv) Any instance where a leaking enclosed spray gun cleaner remains unrepaired and in use for more than 15 days; and

(v) If the operations have been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance with the applicable standards. Sources shall also submit a statement of compliance signed by a responsible company official certifying that the facility is in compliance with all applicable requirements.

(c) *Primer and topcoat application operations.* Each owner or operator of a primer or topcoat application operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) For primers and topcoats where compliance is not being achieved through the use of averaging or a control device, each value of H_i and G_i , as recorded under § 63.752(c)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.745(c);

(ii) For primers and topcoats where compliance is being achieved through the use of averaging, each value of H_a and G_a , as recorded under § 63.752(c)(4)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.745(c);

(iii) If incinerators are used to comply with the standards, all periods when the 3-hour average combustion temperature(s) is (are) less than the average combustion temperature(s) established under § 63.751(b) (11) or (12) during the most recent performance test during which compliance was demonstrated;

(iv) If a carbon adsorber is used;

(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81%, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(v) For control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(vi) All times when a primer or topcoat application operation was not immediately shut down when the pressure drop across a dry particulate filter or HEPA filter system, or the water flow rate through a waterwash system, as appropriate, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures;

(vii) If the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards; and,

(2) Annual reports beginning 12 months after the date of the notification of compliance status listing the number of times the pressure drop or water flow rate for each dry filter or waterwash system, as applicable, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.

(d) *Depainting operation.* Each owner or operator of a depainting operation subject to this subpart shall submit the following information:

(1) Semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(i) Any 24-hour period where organic HAP were emitted from the depainting of aerospace vehicles, other than from the exempt operations listed in § 63.746 (a), (b)(3), and (b)(5).

(ii) Any new chemical strippers used at the facility during the reporting period;

(iii) The organic HAP content of these new chemical strippers;

(iv) For each chemical stripper that undergoes reformulation, its organic HAP content;

(v) Any new non-chemical depainting technique in use at the facility since the notification of compliance status or any subsequent semiannual report was filed;

(vi) For periods of malfunctions:

(A) The non-chemical method or technique that malfunctioned;

(B) The date that the malfunction occurred;

(C) A description of the malfunction;

(D) The methods used to repaint aerospace vehicles during the malfunction period;

(E) The dates that these methods were begun and discontinued; and

(F) The date that the malfunction was corrected;

(vii) All periods where a non-chemical depainting operation subject to § 63.746 (b)(2) and (b)(4) for the control of inorganic HAP emissions was not immediately shut down when the pressure drop or water flow rate was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operational procedures;

(viii) A list of new and discontinued aircraft models repainted at the facility over the last 6 months and a list of the parts normally removed for repainting for each new aircraft model being repainted; and

(ix) If the repainting operation has been in compliance for the semiannual period, a statement signed by a responsible company official that the operation was in compliance with the applicable standards.

(2) Annual reports occurring every 12 months from the date of the notification of compliance status that identify:

(i) The average volume per aircraft of organic HAP-containing chemical strippers or weight of organic HAP used for spot stripping and decal removal operations if it exceeds the limits specified in § 63.746(b)(3); and

(ii) The number of times the pressure drop limit(s) for each filter system or the number of times the water flow rate limit(s) for each waterwash system were outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.

(3) Where a control device is used to control organic HAP emissions, semiannual reports that identify:

(i) If a carbon adsorber is used,
(A) each rolling period when the overall control efficiency of the control system is calculated to be less than 81% for existing systems or less than 95% for new systems, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(ii) For control devices other than a carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(iii) Descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report.

(e) *Chemical milling maskant application operation.* Each owner or operator of a chemical milling maskant application operation subject to this subpart shall submit semiannual reports occurring every 6 months from the date of the notification of compliance status that identify:

(1) For chemical milling maskants where compliance is not being achieved through the use of averaging or a control device, each value of H_i and G_i , as recorded under § 63.752(f)(1)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.747(c);

(2) For chemical milling maskants where compliance is being achieved through the use of averaging, each value of H_a and G_a , as recorded under § 63.752(f)(2)(i), that exceeds the applicable organic HAP or VOC content limit specified in § 63.747(c);

(3) Where a control device is used,

(i) If incinerators are used to comply with the standards, all periods when the 3-hour average combustion temperature(s) is (are) less than the average combustion temperature(s) established under § 63.751(b) (11) or (12) during the most recent performance test during which compliance was demonstrated;

(ii) If a carbon adsorber is used,

(A) Each rolling period when the overall control efficiency of the control system is calculated to be less than 81%, the initial material balance calculation, and any exceedances as demonstrated through the calculation; or,

(B) For nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.

(iii) For control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated;

(4) All chemical milling maskants currently in use that were not listed in the notification of compliance status or any other subsequent semiannual report;

(5) Descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report; and

(6) If the operations have been in compliance for the semiannual period, a statement that the chemical milling maskant application operation has been in compliance with the applicable standards.

[60 FR 45956, Sept. 1, 1996; 61 FR 4903, Feb. 9, 1996, as amended at 61 FR 66227, Dec. 17, 1996; 63 FR 15023, Mar. 27, 1998]

§§ 63.754–63.759 [Reserved]

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG

Reference	Applies to affected sources in subpart GG	Comment
63.1(a)(1)	Yes	Reserved.
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG—
Continued

Reference	Applies to affected sources in subpart GG	Comment
63.1(a)(6)	Yes	
63.1(a)(7)	Yes	
63.1(a)(8)	Yes	
63.1(a)(9)	No	Reserved.
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	Yes	
63.1(b)(2)	Yes	
63.1(b)(3)	Yes	
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Subpart GG does not apply to area sources.
63.1(c)(3)	No	Reserved.
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(d)	No	Reserved.
63.1(e)	Yes	
63.2	Yes	
63.3	Yes	
63.4(a)(1)	Yes	
63.4(a)(2)	Yes	
63.4(a)(3)	Yes	
63.4(a)(4)	No	Reserved.
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	Reserved.
63.5(d)(1)(i)	Yes	
63.5(d)(1)(ii)(A)–(H)	Yes	
63.5(d)(1)(ii)(I)	No	Reserved.
63.5(d)(1)(ii)(J)	Yes	
63.5(d)(1)(iii)	Yes	
63.5(d)(2)–(4)	Yes	
63.5(e)	Yes	
63.5(f)	Yes	
63.6(a)	Yes	
63.6(b)(1)–(5)	Yes	§ 63.749(a) specifies compliance dates for new sources.
63.6(b)(6)	No	Reserved.
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	
63.6(c)(2)	No	The standards in subpart GG are promulgated under section 112(d) of the Act.
63.6(c)(3)–(4)	No	Reserved.
63.6(c)(5)	Yes	
63.6(d)	No	Reserved.
63.6(e)	Yes	63.743(b) includes additional provisions for the operation and maintenance plan.
63.6(f)	Yes	
63.6(g)	Yes	
63.6(h)	No	The standards in subpart GG do not include opacity standards.
63.6(i)(1)–(3)	Yes	
63.6(i)(4)(i)(A)	Yes	
63.6(i)(4)(i)(B)	No	§ 63.743(a)(4) specifies that requests for extension of compliance must be submitted no later than 120 days before an affected source's compliance date.
63.6(i)(4)(ii)	No	The standards in subpart GG are promulgated under section 112(d) of the Act.

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG—
Continued

Reference	Applies to affected sources in subpart GG	Comment
63.6(i)(5)–(12)	Yes	Reserved.
63.6(i)(13)	Yes	
63.6(i)(14)	Yes	
63.6(i)(15)	No	
63.6(i)(16)	Yes	
63.6(j)	Yes	Reserved.
63.7(a)(1)	Yes	
63.7(a)(2)(i)–(vi)	Yes	
63.7(a)(2)(vii)–(viii)	No	
63.7(a)(2)(ix)	Yes	
63.7(a)(3)	Yes	Reserved.
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)	Yes	
63.7(f)	Yes	Reserved.
63.7(g)(1)	Yes	
63.7(g)(2)	No	
63.7(g)(3)	Yes	
63.7(h)	Yes	
63.8(a)(1)–(2)	Yes	Reserved.
63.8(a)(3)	No	
63.8(a)(4)	Yes	
63.8(b)	Yes	
63.8(c)	Yes	
63.8(d)	No	The standards in subpart GG do not include opacity standards.
63.8(e)(1)–(4)	Yes	
63.8(e)(5)(i)	Yes	
63.8(e)(5)(ii)	No	
63.8(f)(1)	Yes	The standards in subpart GG do not include opacity standards.
63.8(f)(2)(i)–(vii)	Yes	
63.8(f)(2)(viii)	No	
63.8(f)(2)(ix)	Yes	
63.8(f)(3)–(6)	Yes	
63.8(g)	Yes	§ 63.753(a)(1) requires submittal of the initial notification at least 1 year prior to the compliance date; § 63.753(a)(2) allows a title V or part 70 permit application to be substituted for the initial notification in certain circumstances.
63.9(a)	Yes	
63.9(b)(1)	Yes	
63.9(b)(2)	Yes	
63.9(b)(3)	Yes	
63.9(b)(4)	Yes	The standards in subpart GG do not include opacity standards.
63.9(b)(5)	Yes	
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	Yes	
63.9(f)	No	The standards in subpart GG do not include opacity standards.
63.9(g)(1)	No	
63.9(g)(2)	No	
63.9(g)(3)	No	
63.9(h)(1)–(3)	Yes	
63.9(h)(4)	No	Reserved.
63.9(h)(5)–(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	Reserved.
63.10(b)	Yes	
63.10(c)(1)	No	
63.10(c)(2)–(4)	No	
63.10(c)(5)–(8)	No	Reserved.
63.10(c)(9)	No	

TABLE 1 TO SUBPART GG OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART GG—Continued

Reference	Applies to affected sources in subpart GG	Comment
63.10(c)(10)–(13)	No	§ 63.8(d) does not apply to this subpart.
63.10(c)(14)	No	
63.10(c)(15)	No	
63.10(d)(1)–(2)	Yes	The standards in subpart GG do not include opacity standards.
63.10(d)(3)	No	
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	The standards in subpart GG do not include opacity standards.
63.10(e)(1)	No	
63.10(e)(2)(i)	No	
63.10(e)(2)(ii)	No	
63.10(e)(3)	No	
63.10(e)(4)	No	The standards in subpart GG do not include opacity standards.
63.10(f)	Yes	
63.11	Yes	
63.12	Yes	
63.13	Yes	
63.14	Yes	
63.15	Yes	

[63 FR 15024, Mar. 27, 1998]

APPENDIX A TO SUBPART GG OF PART 63—SPECIALTY COATING DEFINITIONS

Ablative coating—A coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

Adhesion promoter—A very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

Adhesive bonding primer—A primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.

Aerosol coating—A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

Antichafe coating—A coating applied to areas of moving aerospace components that may rub during normal operations or installation.

Bearing coating—A coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry

lubricative material or a solid film lubricant.

Bonding maskant—A temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

Caulking and smoothing compounds—Semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

Chemical agent-resistant coating (CARC)—An exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

Clear coating—A transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

Commercial exterior aerodynamic structure primer—A primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

Commercial interior adhesive—Materials used in the bonding of passenger cabin interior components. These components must meet the FAA fireworthiness requirements.

Compatible substrate primer—Includes two categories: compatible epoxy primer and adhesive primer. *Compatible epoxy primer* is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. *Adhesive primer* is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

Corrosion prevention system—A coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

Critical use and line sealer maskant—A temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e. line sealer) are also included in this category.

Cryogenic flexible primer—A primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (–275°F and below).

Cryoprotective coating—A coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

Cyanoacrylate adhesive—A fast-setting, single component adhesive that cures at room temperature. Also known as “super glue.”

Dry lubricative material—A coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

Electric or radiation-effect coating—A coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as “classified” by the Department of Defense are exempt.

Electrostatic discharge and electromagnetic interference (EMI) coating—A coating applied to space vehicles, missiles, aircraft radomes,

and helicopter blades to disperse static energy or reduce electromagnetic interference.

Elevated-temperature Skydrol-resistant commercial primer—A primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150°F for 1,000 hours.

Epoxy polyamide topcoat—A coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

Fire-resistant (interior) coating—For civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the FAA fireworthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts subject to the flammability requirements of SE-R-0006 and SSP 30233.

Flexible primer—A primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

Flight test coating—A coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

Fuel tank adhesive—An adhesive used to bond components exposed to fuel and that must be compatible with fuel tank coatings.

Fuel tank coating—A coating applied to fuel tank components to inhibit corrosion and/or bacterial growth and to assure sealant adhesion in extreme environmental conditions.

High temperature coating—A coating designed to withstand temperatures of more than 350 °F.

Insulation covering—Material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

Intermediate release coating—A thin coating applied beneath topcoats to assist in removing the topcoat in repainting operations and generally to allow the use of less hazardous repainting methods.

Lacquer—A clear or pigmented coating formulated with a nitrocellulose or synthetic

resin to dry by evaporation without a chemical reaction. Lacquers are resolvable in their original solvent.

Metalized epoxy coating—A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

Mold release—A coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

Nonstructural adhesive—An adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

Optical anti-reflection coating—A coating with a low reflectance in the infrared and visible wavelength ranges, which is used for anti-reflection on or near optical and laser hardware.

Part marking coating—Coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.

Pretreatment coating—An organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

Rain erosion-resistant coating—A coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

Rocket motor bonding adhesive—An adhesive used in rocket motor bonding applications.

Rocket motor nozzle coating—A catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

Rubber-based adhesive—Quick setting contact cements that provide a strong, yet flexible, bond between two mating surfaces that may be of dissimilar materials.

Scale inhibitor—A coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

Screen print ink—Inks used in screen printing processes during fabrication of decorative laminates and decals.

Seal coat maskant—An overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

Sealant—A material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.

Silicone insulation material—Insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

Solid film lubricant—A very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

Specialized function coatings—Coatings that fulfill extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.

Structural autoclavable adhesive—An adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

Structural nonautoclavable adhesive—An adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or for other critical functions, such as nonstructural bonding in the proximity of engines.

Temporary protective coating—A coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

Thermal control coating—Coatings formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

Touch-up and Repair Coating—A coating used to cover minor coating imperfections appearing after the main coating operation.

Wet fastener installation coating—A primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

Wing coating—A corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

[63 FR 15026, Mar. 27, 1998]

Subpart HH [Reserved]

Subpart II—National Emission Standards for Shipbuilding and Ship Repair (Surface Coating)

SOURCE: 60 FR 64336, Dec. 15, 1995, unless otherwise noted.

§ 63.780 Relationship of subpart II to subpart A of this part.

Table 1 of this subpart specifies the provisions of subpart A of this part

that apply to owners and operators of sources subject to the provisions of this subpart.

§ 63.781 Applicability.

(a) The provisions of this subpart apply to shipbuilding and ship repair operations at any facility that is a major source.

(b) The provisions of this subpart do not apply to coatings used in volumes of less than 200 liters (52.8 gallons) per year, provided the total volume of coating exempt under this paragraph does not exceed 1,000 liters per year (264 gallons per year) at any facility. Coatings exempt under this paragraph shall be clearly labeled as “low-usage exempt,” and the volume of each such coating applied shall be maintained in the facility’s records.

(c) The provisions of this subpart do not apply to coatings applied with hand-held, nonrefillable, aerosol containers or to unsaturated polyester resin (i.e., fiberglass lay-up) coatings. Coatings applied to suitably prepared fiberglass surfaces for protective or decorative purposes are subject to this subpart.

(d) The provisions in subpart A of this part pertaining to startups, shutdowns, and malfunctions and continuous monitoring do not apply to this source category unless an add-on control system is used to comply with this subpart in accordance with § 63.783(c).

§ 63.782 Definitions.

Terms used in this subpart are defined in the Clean Air Act (CAA), in subpart A of part 63, or in this section as follows:

Add-on control system means an air pollution control device such as a carbon absorber or incinerator that reduces pollution in an air stream by destruction or removal prior to discharge to the atmosphere.

Affected source means any shipbuilding or ship repair facility having surface coating operations with a minimum 1,000 liters (L) (264 gallons [gal]) annual marine coating usage that is subject to this subpart.

Air flask specialty coating means any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corro-

sion resistance and that is certified safe for use with breathing air supplies.

Antenna specialty coating means any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.

Antifoulant specialty coating means any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.

As applied means the condition of a coating at the time of application to the substrate, including any thinning solvent.

As supplied means the condition of a coating before any thinning, as sold and delivered by the coating manufacturer to the user.

Batch means the product of an individual production run of a coating manufacturer’s process. A batch may vary in composition from other batches of the same product.

Bitumens mean black or brown materials that are soluble in carbon disulfide and consist mainly of hydrocarbons.

Bituminous resin coating means any coating that incorporates bitumens as a principal component and is formulated primarily to be applied to a substrate or surface to resist ultraviolet radiation and/or water.

Certify means, in reference to the volatile organic compounds (VOC) content or volatile organic hazardous air pollutants (VOHAP) content of a coating, to attest to the VOC content as determined through analysis by Method 24 of appendix A to 40 CFR part 60 or through use of forms and procedures outlined in appendix A of this subpart, or to attest to the VOHAP content as determined through an Administrator-approved test method. In the case of conflicting results, Method 24 of Appendix A to 40 CFR part 60 shall take precedence over the forms and procedures outlined in appendix A to this subpart for the options in which VOC is used as a surrogate for VOHAP.

Coating means any material that can be applied as a thin layer to a substrate and which cures to form a continuous solid film.

Cold-weather time period means any time during which the ambient temperature is below 4.5°C (40°F) and coating is to be applied.

Container of coating means the container from which the coating is applied, including but not limited to a bucket or pot.

Cure volatiles means reaction products which are emitted during the chemical reaction which takes place in some coating films at the cure temperature. These emissions are other than those from the solvents in the coating and may, in some cases, comprise a significant portion of total VOC and/or VOHAP emissions.

Epoxy means any thermoset coating formed by reaction of an epoxy resin (i.e., a resin containing a reactive epoxide with a curing agent).

Exempt compounds means specified organic compounds that are not considered VOC due to negligible photochemical reactivity. Exempt compounds are specified in 40 CFR 51.100(s).

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

General use coating means any coating that is not a specialty coating.

Hazardous air pollutants (HAP) means any air pollutant listed in or pursuant to section 112(b) of the CAA.

Heat resistant specialty coating means any coating that during normal use must withstand a temperature of at least 204°C (400°F).

High-gloss specialty coating means any coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by ASTM Method D523 (incorporation by reference—see § 63.14).

High-temperature specialty coating means any coating that during normal use must withstand a temperature of at least 426°C (800°F).

Inorganic zinc (high-build) specialty coating means a coating that contains 960 grams per liter (8 pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance. (These coatings are typically applied at more than 2 mil dry film thickness.)

Major source means any source that emits or has the potential to emit, in the aggregate, 9.1 megagrams per year (10 tons per year) or more of any HAP or 22.7 megagrams per year (25 tons per year) or more of any combination of HAP.

Maximum allowable thinning ratio means the maximum volume of thinner that can be added per volume of coating without violating the standards of § 63.783(a), as determined using Equation 1 of this subpart.

Military exterior specialty coating or Chemical Agent Resistant Coatings ("CARC") means any exterior topcoat applied to military or U.S. Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.

Mist specialty coating means any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the paint film prior to curing.

Navigational aids specialty coating means any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are recoated aboard ship at their usage site and immediately returned to the water.

Nonskid specialty coating means any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.

Nonvolatiles (or volume solids) means substances that do not evaporate readily. This term refers to the film-forming material of a coating.

Normally closed means a container or piping system is closed unless an operator is actively engaged in adding or removing material.

Nuclear specialty coating means any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure (ASTM D4082-89 [incorporation by reference—see § 63.14]), relatively easy to decontaminate (ASTM D4256-89 [reapproved 1994] [incorporation by reference—see § 63.14]), and resistant to various chemicals to which

the coatings are likely to be exposed (ASTM D3912–80 [incorporation by reference—see § 63.14]). [For nuclear coatings, see the general protective requirements outlined by the U.S. Nuclear Regulatory Commission in a report entitled “U.S. Atomic Energy Commission Regulatory Guide 1.54” dated June 1973, available through the Government Printing Office at (202) 512–2249 as document number A74062–00001.]

Operating parameter value means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation or standard.

Organic zinc specialty coating means any coating derived from zinc dust incorporated into an organic binder that contains more than 960 grams of elemental zinc per liter (8 pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.

Pleasure craft means any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters in length. A vessel rented exclusively to or chartered by individuals for such purposes shall be considered a pleasure craft.

Pretreatment wash primer specialty coating means any coating that contains a minimum of 0.5 percent acid, by mass, and is applied only to bare metal to etch the surface and enhance adhesion of subsequent coatings.

Repair and maintenance of thermoplastic coating of commercial vessels (specialty coating) means any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered “general use” coatings.)

Rubber camouflage specialty coating means any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes.

Sealant for thermal spray aluminum means any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of 1 dry mil.

Ship means any marine or fresh-water vessel used for military or commercial operations, including self-propelled vessels, those propelled by other craft (barges), and navigational aids (buoys). This definition includes, but is not limited to, all military and Coast Guard vessels, commercial cargo and passenger (cruise) ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges. For purposes of this subpart, pleasure crafts and offshore oil and gas drilling platforms are not considered ships.

Shipbuilding and ship repair operations means any building, repair, repainting, converting, or alteration of ships.

Special marking specialty coating means any coating that is used for safety or identification applications, such as markings on flight decks and ships’ numbers.

Specialty coating means any coating that is manufactured and used for one of the specialized applications described within this list of definitions.

Specialty interior coating means any coating used on interior surfaces aboard U.S. military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.

Tack specialty coating means any thin film epoxy coating applied at a maximum thickness of 2 dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.

Thinner means a liquid that is used to reduce the viscosity of a coating and that evaporates before or during the cure of a film.

Thinning ratio means the volumetric ratio of thinner to coating, as supplied.

Thinning solvent: see Thinner.

Undersea weapons systems specialty coating means any coating applied to any component of a weapons system intended to be launched or fired from under the sea.

Volatile organic compounds (VOC) is as defined in § 51.100(s) of this chapter.

Volatile organic hazardous air pollutants (VOHAP) means any compound listed in or pursuant to section 112(b) of the CAA that contains carbon, excluding metallic carbides and carbonates. This definition includes VOC listed as HAP and exempt compounds listed as HAP.

Weld-through preconstruction primer (specialty coating) means a coating that provides corrosion protection for steel during inventory, is typically applied at less than 1 mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1.25 centimeters [0.5 inch]), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings. When constructing new vessels, there may be a need to remove areas of weld-through preconstruction primer due to surface damage or contamination prior to application of film-building coatings.

§ 63.783 Standards.

(a) No owner or operator of any existing or new affected source shall cause or allow the application of any coating to a ship with an as-applied VOHAP content exceeding the applicable limit given in Table 2 of this subpart, as determined by the procedures described in § 63.785 (c)(1) through (c)(4). For the compliance procedures described in § 63.785 (c)(1) through (c)(3), VOC shall be used as a surrogate for VOHAP, and Method 24 of Appendix A to 40 CFR part 60 shall be used as the definitive measure for determining compliance. For the compliance procedure described in § 63.785(c)(4), an alternative test method capable of measuring independent VOHAP shall be used to determine compliance. The method must be submitted to and approved by the Administrator.

(b) Each owner or operator of a new or existing affected source shall ensure that:

(1) All handling and transfer of VOHAP-containing materials to and from containers, tanks, vats, drums, and piping systems is conducted in a manner that minimizes spills.

(2) All containers, tanks, vats, drums, and piping systems are free of cracks, holes, and other defects and remain closed unless materials are being added to or removed from them.

(c) *Approval of alternative means of limiting emissions.* (1) The owner or operator of an affected source may apply to the Administrator for permission to use an alternative means (such as an add-on control system) of limiting emissions from coating operations. The application must include:

(i) An engineering material balance evaluation that provides a comparison of the emissions that would be achieved using the alternative means to those that would result from using coatings that comply with the limits in Table 2 of this subpart, or the results from an emission test that accurately measures the capture efficiency and control device efficiency achieved by the control system and the composition of the associated coatings so that the emissions comparison can be made;

(ii) A proposed monitoring protocol that includes operating parameter values to be monitored for compliance and an explanation of how the operating parameter values will be established through a performance test; and

(iii) Details of appropriate record-keeping and reporting procedures.

(2) The Administrator shall approve the alternative means of limiting emissions if, in the Administrator's judgment, postcontrol emissions of VOHAP per volume applied solids will be no greater than those from the use of coatings that comply with the limits in Table 2 of this subpart.

(3) The Administrator may condition approval on operation, maintenance, and monitoring requirements to ensure that emissions from the source are no greater than those that would otherwise result from this subpart.

§ 63.784 Compliance dates.

(a) Each owner or operator of an existing affected source shall comply within two years after the effective date of this subpart.

(b) Each owner or operator of an existing unaffected area source that increases its emissions of (or its potential to emit) HAP such that the source becomes a major source that is subject

to this subpart shall comply within 1 year after the date of becoming a major source.

(c) Each owner or operator of a new or reconstructed source shall comply with this subpart according to the schedule in § 63.6(b).

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 30816, June 18, 1996]

§ 63.785 Compliance procedures.

(a) For each batch of coating that is received by an affected source, the owner or operator shall (see Figure 1 of this section for a flow diagram of the compliance procedures):

(1) Determine the coating category and the applicable VOHAP limit as specified in § 63.783(a).

(2) Certify the as-supplied VOC content of the batch of coating. The owner or operator may use a certification supplied by the manufacturer for the batch, although the owner or operator retains liability should subsequent testing reveal a violation. If the owner or operator performs the certification testing, only one of the containers in which the batch of coating was received is required to be tested.

(b)(1) In lieu of testing each batch of coating, as applied, the owner or operator may determine compliance with the VOHAP limits using any combination of the procedures described in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this section. The procedure used for each coating shall be determined and documented prior to application.

(2) The results of any compliance demonstration conducted by the affected source or any regulatory agency using Method 24 shall take precedence over the results using the procedures in paragraphs (c)(1), (c)(2), or (c)(3) of this section.

(3) The results of any compliance demonstration conducted by the affected source or any regulatory agency using an approved test method to determine VOHAP content shall take precedence over the results using the procedures in paragraph (c)(4) of this section.

(c)(1) *Coatings to which thinning solvent will not be added.* For coatings to which thinning solvent (or any other material) will not be added under any circumstance or to which only water is

added, the owner or operator of an affected source shall comply as follows:

(i) Certify the as-applied VOC content of each batch of coating.

(ii) Notify the persons responsible for applying the coating that no thinning solvent may be added to the coating by affixing a label to each container of coating in the batch or through another means described in the implementation plan required in § 63.787(b).

(iii) If the certified as-applied VOC content of each batch of coating used during a calendar month is less than or equal to the applicable VOHAP limit in § 63.783(a) (either in terms of g/L of coating or g/L of solids), then compliance is demonstrated for that calendar month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(2) *Coatings to which thinning solvent will be added—coating-by-coating compliance.* For a coating to which thinning solvent is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Prior to the first application of each batch, designate a single thinner for the coating and calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch as follows:

$$R = \frac{(V_s)(\text{VOHAP limit}) - m_{\text{VOC}}}{D_{\text{th}}} \quad \text{Eqn. 1}$$

where:

R=Maximum allowable thinning ratio for a given batch (L thinner/L coating as supplied);

V_s =Volume fraction of solids in the batch as supplied (L solids/L coating as supplied);

VOHAP limit=Maximum allowable as-applied VOHAP content of the coating (g VOHAP/L solids);

m_{VOC} =VOC content of the batch as supplied [g VOC (including cure volatiles and exempt compounds on the HAP list)/L coating (including water and exempt compounds) as supplied];

D_{th} =Density of the thinner (g/L).

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If V_s is not supplied directly by the coating manufacturer, the owner or operator shall determine V_s as follows:

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}} \quad \text{Eqn. 2}$$

where:

$m_{\text{volatiles}}$ =Total volatiles in the batch, including VOC, water, and exempt compounds (g/L coating); and

D_{avg} =Average density of volatiles in the batch (g/L).

The procedures specified in § 63.786(d) may be used to determine the values of variables defined in this paragraph. In addition, the owner or operator may choose to construct nomographs, based on Equation 1 of this subpart, similar or identical to the one provided in ap-

pendix B of this subpart as a means of easily estimating the maximum allowable thinning ratio.

(ii) Prior to the first application of each batch, notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch of the coating by affixing a label to each container of coating or through another means described in the implementation plan required in § 63.787(b).

(iii) By the 15th day of each calendar month, determine the volume of each batch of the coating used, as supplied, during the previous month.

(iv) By the 15th day of each calendar month, determine the total allowable volume of thinner for the coating used during the previous month as follows:

$$V_{\text{th}} = \sum_{i=1}^n (R \times V_b)_i + \sum_{i=1}^n (R_{\text{cold}} \times V_{b-\text{cold}})_i \quad \text{Eqn. 3}$$

where:

V_{th} =Total allowable volume of thinner for the previous month (L thinner);

V_b =Volume of each batch, as supplied and before being thinned, used during non-cold-weather days of the previous month (L coating as supplied);

R_{cold} =Maximum allowable thinning ratio for each batch used during cold-weather days (L thinner/L coating as supplied);

$V_{b-\text{cold}}$ =Volume of each batch, as supplied and before being thinned, used during cold-weather days of the previous month (L coating as supplied);

i =Each batch of coating; and

n =Total number of batches of the coating.

(v) By the 15th day of each calendar month, determine the volume of thinner actually used with the coating during the previous month.

(vi) If the volume of thinner actually used with the coating [paragraph (c)(3)(v) of this section] is less than or equal to the total allowable volume of thinner for the coating [paragraph (c)(3)(iv) of this section], then compli-

ance is demonstrated for the coating for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(3) *Coatings to which the same thinning solvent will be added—group compliance.* For coatings to which the same thinning solvent (or other material) is routinely or sometimes added, the owner or operator shall comply as follows:

(i) Designate a single thinner to be added to each coating during the month and “group” coatings according to their designated thinner.

(ii) Prior to the first application of each batch, calculate the maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating in the group using the equations in paragraph (c)(2) of this section.

(iii) Prior to the first application of each “batch,” notify painters and other persons, as necessary, of the designated thinner and maximum allowable thinning ratio(s) for each batch in the group by affixing a label to each

container of coating or through another means described in the implementation plan required in § 63.787(b).

(iv) By the 15th day of each calendar month, determine the volume of each batch of the group used, as supplied, during the previous month.

(v) By the 15th day of each calendar month, determine the total allowable volume of thinner for the group for the previous month using Equation 3 of this subpart.

(vi) By the 15th day of each calendar month, determine the volume of thinner actually used with the group during the previous month.

(vii) If the volume of thinner actually used with the group [paragraph (c)(3)(vi) of this section] is less than or equal to the total allowable volume of thinner for the group [paragraph (c)(3)(v) of this section], then compliance is demonstrated for the group for the previous month, unless a violation is revealed using Method 24 of Appendix A to 40 CFR part 60.

(4) *Demonstration of compliance through an alternative (i.e., other than Method 24 of Appendix A to 40 CFR part 60) test method.* The owner or operator shall comply as follows:

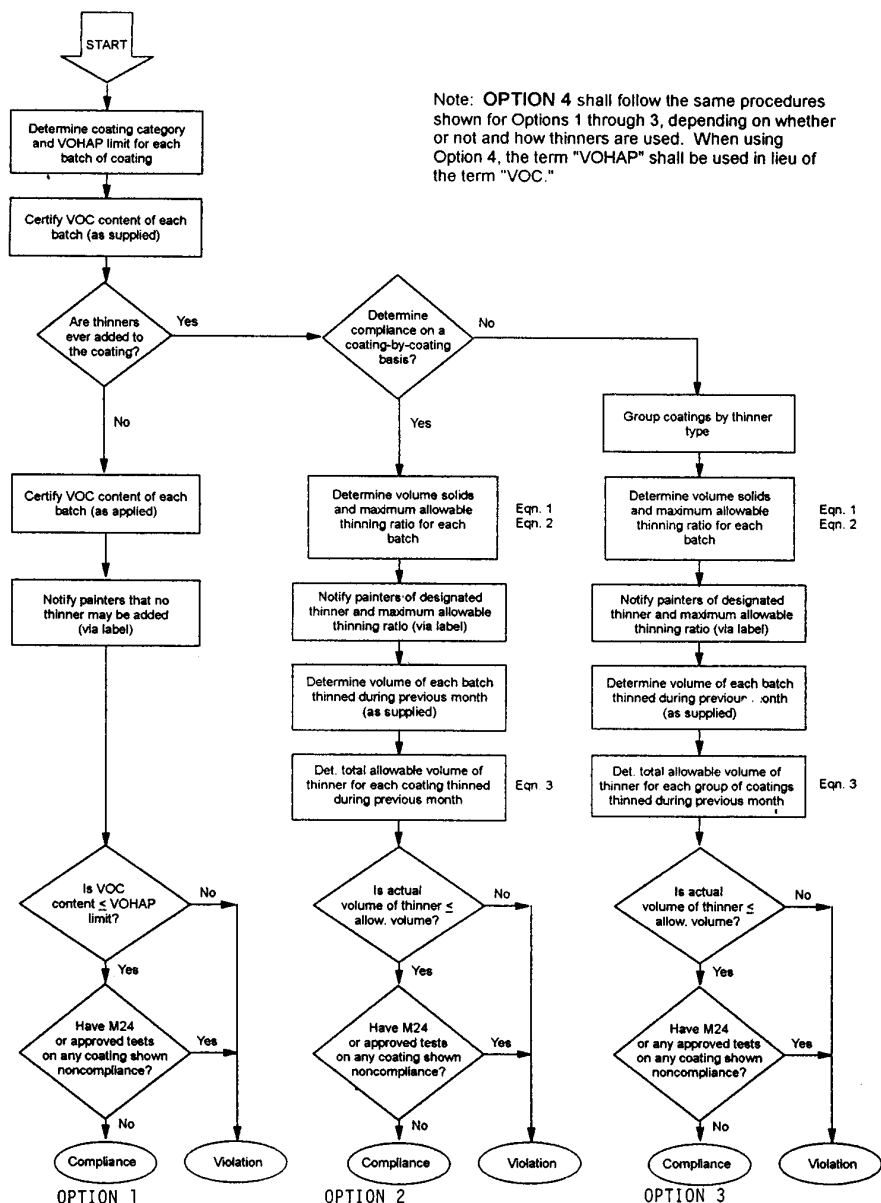
(i) Certify the as-supplied VOHAP content (g VOHAP/L solids) of each batch of coating.

(ii) If no thinning solvent will be added to the coating, the owner or operator of an affected source shall follow the procedure described in § 63.785(c)(1), except that VOHAP content shall be used in lieu of VOC content.

(iii) If thinning solvent will be added to the coating, the owner or operator of an affected source shall follow the procedure described in § 63.785(c)(2) or (3), except that in Equation 1 of this subpart: the term " m_{VOC} " shall be replaced by the term " m_{VOHAP} ," defined as the VOHAP content of the coating as supplied (g VOHAP/L coating) and the term " D_{th} " shall be replaced by the term " $D_{th(VOHAP)}$ " defined as the average density of the VOHAP thinner(s) (g/L).

(d) A violation revealed through any approved test method shall result in a 1-day violation for enforcement purposes. A violation revealed through the recordkeeping procedures described in paragraphs (c)(1) through (c)(4) of this section shall result in a 30-day violation for enforcement purposes, unless the owner or operator provides sufficient data to demonstrate the specific days during which noncompliant coatings were applied.

Figure 1 to §63.785 Flow diagram of compliance procedures

**§63.786 Test methods and procedures.**

(a) For the compliance procedures described in §63.785(c) (1) through (c)(3),

Method 24 of 40 CFR part 60, appendix A, is the definitive method for determining the VOC content of coatings, as supplied or as applied. When a coating

or thinner contains exempt compounds that are volatile HAP or VOHAP, the owner or operator shall ensure, when determining the VOC content of a coating, that the mass of these exempt compounds is included.

(b) For the compliance procedure described in § 63.785(c)(4), the Administrator must approve the test method for determining the VOHAP content of coatings and thinners. As part of the approval, the test method must meet the specified accuracy limits indicated below for sensitivity, duplicates, repeatability, and reproducibility coefficient of variation each determined at the 95 percent confidence limit. Each percentage value below is the corresponding coefficient of variation multiplied by 2.8 as in the ASTM Method E180–93: Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals (incorporation by reference—see § 63.14).

(1) *Sensitivity.* The overall sensitivity must be sufficient to identify and calculate at least one mass percent of the compounds of interest based on the original sample. The sensitivity is defined as ten times the noise level as specified in ASTM Method D3257–93: Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography (incorporation by reference—see § 63.14). In determining the sensitivity, the level of sample dilution must be factored in.

(2) *Repeatability.* First, at the 0.1–5 percent analyte range the results would be suspect if duplicates vary by more than 6 percent relative and/or day to day variation of mean duplicates by the same analyst exceeds 10 percent relative. Second, at greater than 5 percent analyte range the results would be suspect if duplicates vary by more than 5 percent relative and/or day to day variation of duplicates by the same analyst exceeds 5 percent relative.

(3) *Reproducibility.* First, at the 0.1–5 percent analyte range the results would be suspect if lab to lab variation exceeds 60 percent relative. Second, at greater than 5 percent range the results would be suspect if lab to lab variation exceeds 20 percent relative.

(4) Any test method should include information on the apparatus, reagents

and materials, analytical procedure, procedure for identification and confirmation of the volatile species in the mixture being analyzed, precision and bias, and other details to be reported. The reporting should also include information on quality assurance (QA) auditing.

(5) Multiple and different analytical techniques must be used for positive identification if the components in a mixture under analysis are not known. In such cases a single column gas chromatograph (GC) may not be adequate. A combination of equipment may be needed such as a GC/mass spectrometer or GC/infrared system. (If a GC method is used, the operator must use practices in ASTM Method E260–91: Standard Practice for Gas Chromatography [incorporation by reference—see § 63.14].)

(c) A coating manufacturer or the owner or operator of an affected source may use batch formulation data as a test method in lieu of Method 24 of Appendix A to 40 CFR part 60 to certify the as-supplied VOC content of a coating if the manufacturer or the owner or operator has determined that batch formulation data have a consistent and quantitatively known relationship to Method 24 results. This determination shall consider the role of cure volatiles, which may cause emissions to exceed an amount based solely upon coating formulation data. Notwithstanding such determination, in the event of conflicting results, Method 24 of appendix A of 40 CFR part 60 shall take precedence.

(d) Each owner or operator of an affected source shall use or ensure that the manufacturer uses the form and procedures mentioned in appendix A of this subpart to determine values for the thinner and coating parameters used in Equations 1 and 2 of this subpart. The owner or operator shall ensure that the coating/thinner manufacturer (or supplier) provides information on the VOC and VOHAP contents of the coatings/thinners and the procedure(s) used to determine these values.

§ 63.787 Notification requirements.

(a) Each owner or operator of an affected source shall comply with all applicable notification requirements in

§ 63.9(a) through (d) and (i) through (j), with the exception that the deadline specified in § 63.9(b) (2) and (3) shall be extended from 120 days to 180 days. Any owner or operator that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall comply with the applicable requirements of § 63.9(e) through (h).

(b) *Implementation plan.* The provisions of § 63.9(a) apply to the requirements of this paragraph.

(1) Each owner or operator of an affected source shall:

(i) Prepare a written implementation plan that addresses each of the subject areas specified in paragraph (b)(3) of this section; and

(ii) Not later than one year after the effective date of this subpart, submit the implementation plan to the Administrator along with the notification required by § 63.9(b)(2) or (b)(5) of subpart A, as applicable.

(2) [Reserved]

(3) *Implementation plan contents.* Each implementation plan shall address the following subject areas:

(i) *Coating compliance procedures.* The implementation plan shall include the compliance procedure(s) under § 63.785(c) that the source intends to use.

(ii) *Recordkeeping procedures.* The implementation plan shall include the procedures for maintaining the records required under § 63.788, including the procedures for gathering the necessary data and making the necessary calculations.

(iii) *Transfer, handling, and storage procedures.* The implementation plan shall include the procedures for ensuring compliance with § 63.783(b).

(4) *Major sources that intend to become area sources by the compliance date.* Existing major sources that intend to become area sources by the December 16, 1997 compliance date may choose to submit, in lieu of the implementation plan required under paragraph (b)(1) of this section, a statement that, by the compliance date, the major source intends to obtain and comply with federally enforceable limits on their poten-

tial to emit which make the facility an area source.

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 30816, June 18, 1996]

§ 63.788 Recordkeeping and reporting requirements.

(a) Each owner or operator of an affected source shall comply with the applicable recordkeeping and reporting requirements in § 63.10 (a), (b), (d), and (f). Any owner that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall also comply with the applicable requirements of § 63.10 (c) and (e). A summary of recordkeeping and reporting requirements is provided in Table 3 of this subpart.

(b) *Recordkeeping requirements.* (1) Each owner or operator of a major source shipbuilding or ship repair facility having surface coating operations with less than 1000 liters (L) (264 gallons (gal)) annual marine coating usage shall record the total volume of coating applied at the source to ships. Such records shall be compiled monthly and maintained for a minimum of 5 years.

(2) Each owner or operator of an affected source shall compile records on a monthly basis and maintain those records for a minimum of 5 years. At a minimum, these records shall include:

(i) All documentation supporting initial notification;

(ii) A copy of the affected source's approved implementation plan;

(iii) The volume of each low-usage-exempt coating applied;

(iv) Identification of the coatings used, their appropriate coating categories, and the applicable VOHAP limit;

(v) Certification of the as-supplied VOC content of each batch of coating;

(vi) A determination of whether containers meet the standards as described in § 63.783(b)(2); and

(vii) The results of any Method 24 of appendix A to 40 CFR part 60 or approved VOHAP measurement test conducted on individual containers of coating, as applied.

(3) The records required by paragraph (b)(2) of this section shall include additional information, as determined by the compliance procedure(s) described

in § 63.785(c) that each affected source followed:

(i) *Coatings to which thinning solvent will not be added.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(1) shall contain the following information:

(A) Certification of the as-applied VOC content of each batch of coating; and

(B) The volume of each coating applied.

(ii) *Coatings to which thinning solvent will be added—coating-by-coating compliance.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(2) shall contain the following information:

(A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids (nonvolatiles) in each batch, including any calculations;

(B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations;

(C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5°C (40°F) at the time the coating was applied and the volume used of each batch of the coating, as supplied, during these dates;

(D) The volume used of each batch of the coating, as supplied;

(E) The total allowable volume of thinner for each coating, including calculations; and

(F) The actual volume of thinner used for each coating.

(iii) *Coatings to which the same thinning solvent will be added—group compliance.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(3) shall contain the following information:

(A) The density and mass fraction of water and exempt compounds of each thinner and the volume fraction of solids in each batch, including any calculations;

(B) The maximum allowable thinning ratio (or ratios, if the affected source complies with the cold-weather limits in addition to the other limits specified in Table 2 of this subpart) for each batch of coating, including calculations;

(C) If an affected source chooses to comply with the cold-weather limits, the dates and times during which the ambient temperature at the affected source was below 4.5°C (40°F) at the time the coating was applied and the volume used of each batch in the group, as supplied, during these dates;

(D) Identification of each group of coatings and their designated thinners;

(E) The volume used of each batch of coating in the group, as supplied;

(F) The total allowable volume of thinner for the group, including calculations; and

(G) The actual volume of thinner used for the group.

(iv) *Demonstration of compliance through an alternative (i.e., non-Method 24 in appendix A to 40 CFR part 60) test method.* The records maintained by facilities demonstrating compliance using the procedure described in § 63.785(c)(4) shall contain the following information:

(A) Identification of the Administrator-approved VOHAP test method or certification procedure;

(B) For coatings to which the affected source does not add thinning solvents, the source shall record the certification of the as-supplied and as-applied VOHAP content of each batch and the volume of each coating applied;

(C) For coatings to which the affected source adds thinning solvent on a coating-by-coating basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(ii) of this section; and

(D) For coatings to which the affected source adds thinning solvent on a group basis, the source shall record all of the information required to be recorded by paragraph (b)(3)(iii) of this section.

(4) If the owner or operator of an affected source detects a violation of the standards specified in § 63.783, the owner or operator shall, for the remainder of the reporting period during

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which the violation(s) occurred, include the following information in his or her records:

(i) A summary of the number and duration of deviations during the reporting period, classified by reason, including known causes for which a Federally-approved or promulgated exemption from an emission limitation or standard may apply.

(ii) Identification of the data availability achieved during the reporting period, including a summary of the number and total duration of incidents that the monitoring protocol failed to perform in accordance with the design of the protocol or produced data that did not meet minimum data accuracy and precision requirements, classified by reason.

(iii) Identification of the compliance status as of the last day of the reporting period and whether compliance was continuous or intermittent during the reporting period.

(iv) If, pursuant to paragraph (b)(4)(iii) of this section, the owner or operator identifies any deviation as resulting from a known cause for which no Federally-approved or promulgated exemption from an emission limitation or standard applies, the monitoring report shall also include all records that the source is required to maintain that pertain to the periods during which such deviation occurred and:

(A) The magnitude of each deviation;
(B) The reason for each deviation;

(C) A description of the corrective action taken for each deviation, including action taken to minimize each deviation and action taken to prevent recurrence; and

(D) All quality assurance activities performed on any element of the monitoring protocol.

(c) *Reporting requirements.* Before the 60th day following completion of each 6-month period after the compliance date specified in §63.784, each owner or operator of an affected source shall submit a report to the Administrator for each of the previous 6 months. The report shall include all of the information that must be retained pursuant to paragraphs (b) (2) through (3) of this section, except for that information specified in paragraphs (b)(2) (i) through (ii), (b)(2)(v), (b)(3)(i)(A), (b)(3)(ii)(A), and (b)(3)(iii)(A). If a violation at an affected source is detected, the source shall also report the information specified in paragraph (b)(4) of this section for the reporting period during which the violation(s) occurred. To the extent possible, the report shall be organized according to the compliance procedure(s) followed each month by the affected source.

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 66227, Dec. 17, 1996]

TABLE 1 TO SUBPART II OF PART 63—GENERAL PROVISIONS OF APPLICABILITY TO SUBPART II

Reference	Applies to subpart II	Comment
63.1(a)(1)–(3)	Yes.	Subpart II clarifies the applicability of each paragraph in subpart A to sources subject to subpart II.
63.1(a)(4)	Yes.	
63.1(a)(5)–(7)	Yes.	Discusses State programs.
63.1(a)(8)	No	
63.1(a)(9)–(14) ..	Yes.	§ 63.781 specifies applicability in more detail.
63.1(b)(1)	Yes.	
63.1(b)(2)–(3)	Yes.	Additional terms are defined in § 63.782; when overlap between subparts A and II occurs, subpart II takes precedence.
63.1(c)–(e)	Yes.	
63.2	Yes.	Other units used in subpart II are defined in that subpart.
63.3	Yes.	
63.4	Yes.	Except information on control devices and control efficiencies should not be included in the application unless an add-on control system is or will be used to comply with subpart II in accordance with § 63.783(c).
63.5(a)–(c)	Yes.	
63.5(d)	Yes.	Except § 63.784(a) specifies the compliance date for existing affected sources.
63.5(e)–(f)	Yes.	
63.6(a)–(b)	Yes.	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these paragraphs do apply.
63.6(c)–(d)	Yes.	
63.6(e)–(f)	No	§ 63.783(c) specifies procedures for application and approval of alternative means of limiting emissions.
63.6(g)	No	

TABLE 1 TO SUBPART II OF PART 63—GENERAL PROVISIONS OF APPLICABILITY TO SUBPART II—
Continued

Reference	Applies to subpart II	Comment
63.6(h)	No	Subpart II does not contain any opacity or visible emission standards.
63.6(i)–(j)	Yes.	
63.7	No	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.
63.8	No	
63.9(a)–(d)	Yes	§ 63.787(a) extends the initial notification deadline to 180 days. § 63.787(b) requires an implementation plan to be submitted with the initial notification.
63.9(e)	No	
63.9(f)	No	Subpart II does not contain any opacity or visible emission standards
63.9(g)–(h)	No	
63.9(i)–(j)	Yes.	§ 63.788(b)–(c) list additional recordkeeping and reporting requirements.
63.10(a)–(b)	Yes	
63.10(c)	No	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.
63.10(d)	Yes.	
63.10(e)	No	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this paragraph does apply.
63.10(f)	Yes.	
63.11	No	If an alternative means of limiting emissions (e.g., an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.
63.12–63.15	Yes.	

TABLE 2 TO SUBPART II OF PART 63.—VOLATILE ORGANIC HAP (VOHAP) LIMITS FOR MARINE COATINGS

Coating category	VOHAP limits ^{a b c}		
	Grams/liter coating (minus water and exempt compounds)	Grams/liter solids ^d	
		t ≥ 4.5° C	t < 4.5° C ^e
General use	340	571	728
Specialty:			
Air flask	340	571	728
Antenna	530	1,439	
Antifoulant	400	765	971
Heat resistant	420	841	1,069
High-gloss	420	841	1,069
High-temperature	500	1,237	1,597
Inorganic zinc high-build	340	571	728
Military exterior	340	571	728
Mist	610	2,235	
Navigational aids	550	1,597	
Nonskid	340	571	728
Nuclear	420	841	1,069
Organic zinc	360	630	802
Pretreatment wash primer	780	11,095	
Repair and maint. of thermoplastics	550	1,597	
Rubber camouflage	340	571	728
Sealant for thermal spray aluminum	610	2,235	
Special marking	490	1,178	
Specialty interior	340	571	728
Tack coat	610	2,235	
Undersea weapons systems	340	571	728
Weld-through precoat primer	650	2,885	

^aThe limits are expressed in two sets of equivalent units. Either set of limits may be used for the compliance procedure described in § 63.785(c)(1), but only the limits expressed in units of g/L solids (nonvolatiles) shall be used for the compliance procedures described in § 63.785(c) (2) through (4).

^bVOC (including exempt compounds listed as HAP) shall be used as a surrogate for VOHAP for those compliance procedures described in § 63.785(c) (1) through (3).

^cTo convert from g/L to lb/gal, multiply by (3.785 L/gal)/(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.

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^dVOHAP limits expressed in units of mass of VOHAP per volume of solids were derived from the VOHAP limits expressed in units of mass of VOHAP per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.

^eThese limits apply during cold-weather time periods, as defined in § 63.782. Cold-weather allowances are not given to coatings in categories that permit less than 40 percent volume solids (nonvolatiles). Such coatings are subject to the same limits regardless of weather conditions.

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 66228, Dec. 17, 1996]

TABLE 3 TO SUBPART II OF PART 63.—SUMMARY OF RECORDKEEPING AND REPORTING REQUIREMENTS^{a b c}

Requirement	All Opts.		Option 1		Option 2		Option 3	
	Rec	Rep	Rec	Rep	Rec	Rep	Rec	Rep
Notification (§ 63.9(a)–(d))	X	X						
Implementation plan (§ 63.787(b)) ^d	X	X						
Volume of coating applied at unaffected major sources (§ 63.781(b))	X							
Volume of each low-usage-exempt coating applied at affected sources (§ 63.781(c))	X	X						
ID of the coatings used, their appropriate coating categories, and the applicable VOHAP limit	X	X						
Determination of whether containers meet the standards described in § 63.783(b)(2)	X	X						
Results of M–24 or other approved tests	X	X						
Certification of the as-supplied VOC content of each batch	X							
Certification of the as-applied VOC content of each batch			X					
Volume of each coating applied			X	X				
Density of each thinner and volume fraction of solids in each batch					X	X		
Maximum allowable thinning ratio(s) for each batch					X	X	X	X
Volume used of each batch, as supplied					X	X	X	X
Total allowable volume of thinner					X	X	X	X
Actual volume of thinner used					X	X	X	X
Identification of each group of coatings and designated thinners							X	X

^aAffected sources that comply with the cold-weather limits must record and report additional information, as specified in § 63.788(b)(3) (ii)(C), (iii)(C), and (iv)(D).

^bAffected sources that detect a violation must record and report additional information, as specified in § 63.788(b)(4).

^cOPTION 4: the recordkeeping and reporting requirements of Option 4 are identical to those of Options 1, 2, or 3, depending on whether and how thinners are used. However, when using Option 4, the term “VOHAP” shall be used in lieu of the term “VOC,” and the owner or operator shall record and report the Administrator-approved VOHAP test method or certification procedure.

^dMajor sources that intend to become area sources by the compliance date may, in lieu of submitting an implementation plan, choose to submit a statement of intent as specified in § 63.787(b)(4).

APPENDIX A TO SUBPART II OF PART 63— VOC DATA SHEET¹

Properties of the Coating “As Supplied” by the Manufacturer²

Coating Manufacturer: _____
Coating Identification: _____
Batch Identification: _____
Supplied To: _____

Properties of the coating as supplied¹ to the customer:

A. Coating Density: (D_c)_s _____ g/L
[] ASTM D1475–90* [] Other³

B. Total Volatiles: (m_v)_s _____ Mass Percent
[] ASTM D2369–93* [] Other³

C. Water Content: 1. (m_w)_s _____ Mass Percent
[] ASTM D3792–91* [] ASTM D4017–90*
[] Other³

2. (v_w)_s _____ Volume Percent
[] Calculated [] Other³

D. Organic Volatiles: (m_o)_s _____ Mass Percent

E. Nonvolatiles: (v_n)_s _____ Volume Percent
[] Calculated [] Other³

F. VOC Content (VOC)_s:

1. _____ g/L solids (nonvolatiles)

2. _____ g/L coating (less water and exempt compounds)

G. Thinner Density: D_{th} _____ g/L
ASTM _____ [] Other³

Remarks: (use reverse side)

Signed: _____ Date: _____

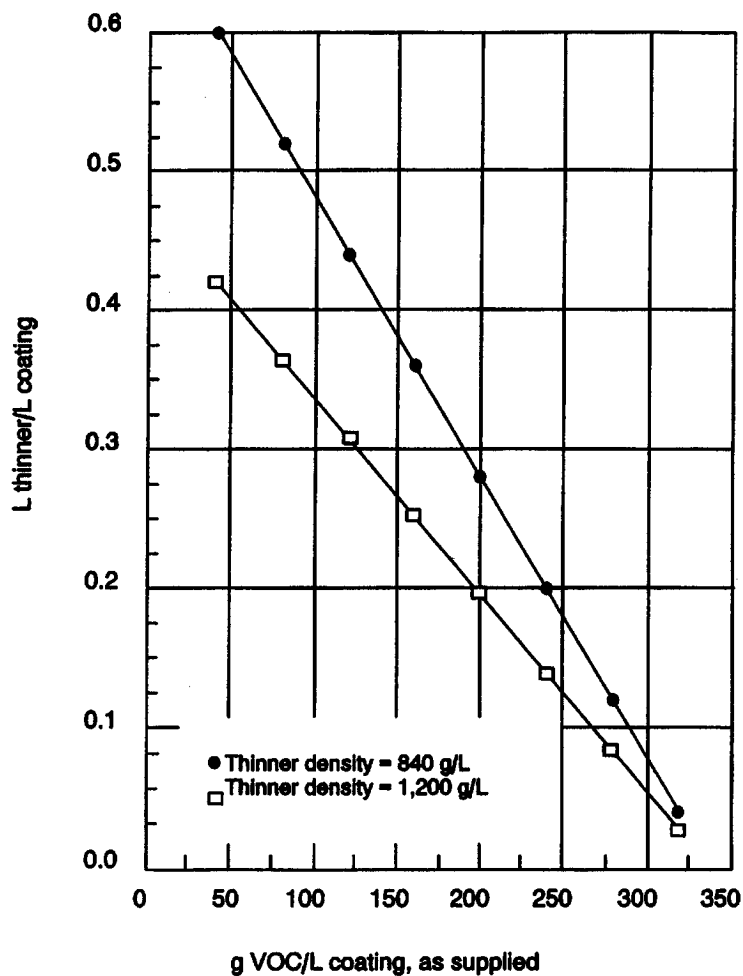
¹Adapted from EPA-340/1-86-016 (July 1986), p. II-2.

²The subscript “s” denotes each value is for the coating “as supplied” by the manufacturer.

*Incorporation by reference—see § 63.14.

³Explain the other method used under “Remarks.”

Appendix B To Subpart II of Part 63 -- Maximum Allowable Thinning Rates As A Function Of As Supplied VOC Content And Thinner Density^{a,b}



^a These graphs represent maximum allowable thinning ratios for general use coatings without water or exempt compounds.

^b The average density of the volatiles in the coating was assumed = 840 g solvent/L solvent.

[60 FR 64336, Dec. 15, 1995, as amended at 61 FR 66227, 66228, Dec. 17, 1996]

Subpart JJ—National Emission Standards for Wood Furniture Manufacturing Operations

SOURCE: 60 FR 62936, Dec. 7, 1995, unless otherwise noted.

§ 63.800 Applicability.

(a) The affected source to which this subpart applies is each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63, subpart A, § 63.2. The owner or operator of a source that meets the definition for an incidental wood furniture manufacturer shall maintain purchase or usage records demonstrating that the source meets the definition in § 63.801 of this subpart, but the source shall not be subject to any other provisions of this subpart.

(b) A source that complies with the limits and criteria specified in paragraphs (b)(1), (b)(2), or (b)(3) of this section is an area source for the purposes of this subpart and is not subject to any other provision of this rule, provided that: In the case of paragraphs (b)(1) and (b)(2), finishing materials, adhesives, cleaning solvents and washoff solvents used for wood furniture or wood furniture component manufacturing operations account for at least 90 percent of annual HAP emissions at the plant site, and if the plant site has HAP emissions that do not originate from the listed materials, the owner or operator shall keep any records necessary to demonstrate that the 90 percent criterion is being met. A source that initially relies on the limits and criteria specified in paragraphs (b)(1), (b)(2), and (b)(3) to become an area source, but subsequently exceeds the relevant limit (without first obtaining and complying with other limits that keep its potential to emit hazardous air pollutants below major source levels), becomes a major source and must comply thereafter with all applicable provisions of this subpart starting on the applicable compliance date in § 63.800. Nothing in this paragraph (b) is intended to preclude a source from limiting its potential to emit through other appropriate mecha-

nisms that may be available through the permitting authority.

(1) The owner or operator of the source uses no more than 250 gallons per month, for every month, of coating, gluing, cleaning, and washoff materials at the source, including materials used for source categories other than wood furniture (surface coating), but excluding materials used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining motor vehicles operated by the facility, or the use of toxic chemicals contained in intake water (used for processing or noncontact cooling) or intake air (used either as compressed air or for combustion). The owner or operator shall maintain records of the total gallons of coating, gluing, cleaning, and washoff materials used each month, and upon request submit such records to the Administrator. These records shall be maintained for five years.

(2) The owner or operator of the source uses no more than 3,000 gallons per rolling 12-month period, for every 12-month period, of coating, gluing, cleaning, and washoff materials at the source, including materials used for source categories other than wood furniture (surface coating), but excluding materials used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining motor vehicles operated by the facility, or the use of toxic chemicals contained in intake water (used for processing or noncontact cooling) or intake air (used either as compressed air or for combustion). A rolling 12-month period includes the previous 12 months of operation. The owner or operator of the source shall maintain records of the total gallons of coating, gluing, cleaning, and washoff materials used each month and the total gallons used each previous month, and upon request submit such records to the Administrator. Because records are needed over the previous set of 12 months, the owner or operator shall keep monthly records beginning no less than one year before the compliance date specified in § 63.800(e).

Records shall be maintained for five years.

(3) The source emits no more than 4.5 Mg (5 tons) of any one HAP per rolling 12-month period and no more than 11.4 Mg (12.5 tons) of any combination of HAP per rolling 12-month period, and at least 90 percent of the plantwide emissions per rolling 12-month period are associated with the manufacture of wood furniture or wood furniture components.

(c) This subpart does not apply to research or laboratory facilities as defined in §63.801.

(d) Owners or operators of affected sources shall also comply with the requirements of subpart A of this part (General Provisions), according to the applicability of subpart A to such sources, as identified in Table 1 of this subpart.

(e) The compliance date for existing affected sources that emit less than 50 tons per year of HAP in 1996 is December 7, 1998. The compliance date for existing affected sources that emit 50 tons or more of hazardous air pollutants in 1996 is November 21, 1997. The owner or operator of an existing area source that increases its emissions of (or its potential to emit) HAP such that the source becomes a major source that is subject to this subpart shall comply with this subpart one year after becoming a major source.

(f) New affected sources must comply with the provisions of this standard immediately upon startup or by December 7, 1995, whichever is later. New area sources that become major sources shall comply with the provisions of this standard immediately upon becoming a major source.

(g) Reconstructed affected sources are subject to the requirements for new affected sources. The costs associated with the purchase and installation of air pollution control equipment (e.g., incinerators, carbon adsorbers, etc.) are not considered in determining whether the facility has been reconstructed, unless the control equipment is required as part of the process (e.g., product recovery). Additionally, the costs of retrofitting and replacement of equipment that is installed specifically to comply with this subpart are not considered reconstruction costs. For

example, an affected source may convert to waterborne coatings to meet the requirements of this subpart. At most facilities, this conversion will require the replacement of existing storage tanks, mix equipment, and transfer lines. The cost of replacing the equipment is not considered in determining whether the facility has been reconstructed.

[60 FR 62936, Dec. 7, 1995, as amended at 62 FR 30259, June 3, 1997]

§63.801 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the CAA and in subpart A (General Provisions) of this part.

Adhesive means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means. Under this subpart, adhesives shall not be considered coatings or finishing materials. Products used on humans and animals, adhesive tape, contact paper, or any other product with an adhesive incorporated onto or in an inert substrate shall not be considered adhesives under this subpart.

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative.

Aerosol adhesive means an adhesive that is dispensed from a pressurized container as a suspension of fine solid or liquid particles in gas.

Affected source means a wood furniture manufacturing facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63.2, excluding sources that meet the criteria established in §63.800(a), (b) and (c) of this subpart.

Alternative method means any method of sampling and analyzing for an air pollutant that is not a reference or equivalent method but has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for a determination of compliance.

As applied means the HAP and solids content of the coating or contact adhesive that is actually used for coating or gluing the substrate. It includes the contribution of materials used for in-house dilution of the coating or contact adhesive.

Basecoat means a coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials, and is usually topcoated for protection.

Baseline conditions means the conditions that exist prior to an affected source implementing controls, such as a control system.

Building enclosure means a building housing a process that meets the requirements of a temporary total enclosure. The EPA Method 204E is used to identify all emission points from the building enclosure and to determine which emission points must be tested. For additional information see *Guidelines for Determining Capture Efficiency*, January 1994. Docket No. A-93-10, Item No. IV-B-1.

Capture device means a hood, enclosed room, floor sweep, or other means of collecting solvent emissions or other pollutants into a duct so that the pollutant can be directed to a pollution control device such as an incinerator or carbon adsorber.

Capture efficiency means the fraction of all organic vapors generated by a process that are directed to a control device.

Certified product data sheet (CPDS) means documentation furnished by coating or adhesive suppliers or an outside laboratory that provides:

(1) The VHAP content of a finishing material, contact adhesive, or solvent, by percent weight, measured using the EPA Method 311 (as promulgated in this subpart), or an equivalent or alternative method (or formulation data if the coating meets the criteria specified in § 63.805(a));

(2) The solids content of a finishing material or contact adhesive by percent weight, determined using data from the EPA Method 24, or an alternative or equivalent method (or formulation data if the coating meets the criteria specified in § 63.805(a)); and

(3) The density, measured by EPA Method 24 or an alternative or equivalent

method. Therefore, the reportable VHAP content shall represent the maximum aggregate emissions potential of the finishing material, adhesive, or solvent in concentrations greater than or equal to 1.0 percent by weight or 0.1 percent for VHAP that are carcinogens, as defined by the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR part 1910), as formulated. Only VHAP present in concentrations greater than or equal to 1.0 percent by weight, or 0.1 percent for VHAP that are carcinogens, must be reported on the CPDS. The purpose of the CPDS is to assist the affected source in demonstrating compliance with the emission limitations presented in § 63.802.

NOTE: Because the optimum analytical conditions under EPA Method 311 vary by coating, the coating or adhesive supplier may also choose to include on the CPDS the optimum analytical conditions for analysis of the coating, adhesive, or solvent using EPA Method 311. Such information may include, but not be limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.)

Cleaning operations means operations in which organic solvent is used to remove coating materials or adhesives from equipment used in wood furniture manufacturing operations.

Coating means a protective, decorative, or functional film applied in a thin layer to a surface. Such materials include, but are not limited to, paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, enamels, inks, and temporary protective coatings. Aerosol spray paints used for touch-up and repair are not considered coatings under this subpart.

Coating application station means the part of a coating operation where the coating is applied, e.g., a spray booth.

Coating operation means those activities in which a coating is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

Coating solids (or solids) means the part of the coating which remains after the coating is dried or cured; solids content is determined using data from the EPA Method 24, or an equivalent or alternative method.

Compliant coating/contact adhesive means a finishing material, contact adhesive, or strippable booth coating that meets the emission limits specified in Table 3 of this subpart.

Contact adhesive means an adhesive that is applied to two substrates, dried, and mated under only enough pressure to result in good contact. The bond is immediate and sufficiently strong to hold pieces together without further clamping, pressure, or airing.

Continuous coater means a finishing system that continuously applies used finishing materials onto furniture parts moving along a conveyor. Finishing materials that are not transferred to the part are recycled to a reservoir. Several types of application methods can be used with a continuous coater including spraying, curtain coating, roll coating, dip coating, and flow coating.

Continuous compliance means that the affected source is meeting the emission limitations and other requirements of the rule at all times and is fulfilling all monitoring and recordkeeping provisions of the rule in order to demonstrate compliance.

Control device means any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Includes, but is not limited to, incinerators, carbon adsorbers, and condensers.

Control device efficiency means the ratio of the pollutant released by a control device and the pollutant introduced to the control device.

Control system means the combination of capture and control devices used to reduce emissions to the atmosphere.

Conventional air spray means a spray coating method in which the coating is atomized by mixing it with compressed air and applied at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization. Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is employed to attract the coating to the workpiece.

Data quality objective (DQO) approach means a set of approval criteria that must be met so that data from an alternative test method can be used in determining the capture efficiency of a control system. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

Day means a period of 24 consecutive hours beginning at midnight local time, or beginning at a time consistent with a facility's operating schedule.

Disposed offsite means sending used organic solvent or coatings outside of the facility boundaries for disposal.

Emission means the release or discharge, whether directly or indirectly, of HAP into the ambient air.

Enamel means a coat of colored material, usually opaque, that is applied as a protective topcoat over a basecoat, primer, or previously applied enamel coats. In some cases, another finishing material may be applied as a topcoat over the enamel.

Equipment leak means emissions of volatile hazardous air pollutants from pumps, valves, flanges, or other equipment used to transfer or apply coatings, adhesives, or organic solvents.

Equivalent method means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specific conditions.

Finishing material means a coating used in the wood furniture industry. Such materials include, but are not limited to, stains, basecoats, washcoats, enamels, sealers, and topcoats.

Finishing operation means those operations in which a finishing material is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

Foam adhesive means a contact adhesive used for gluing foam to fabric, foam to foam, and fabric to wood.

Gluing operation means those operations in which adhesives are used to join components, for example, to apply a laminate to a wood substrate or foam to fabric.

Incidental wood furniture manufacturer means a major source that is primarily

engaged in the manufacture of products other than wood furniture or wood furniture components and that uses no more than 100 gallons per month of finishing material or adhesives in the manufacture of wood furniture or wood furniture components.

Incinerator means, for the purposes of this industry, an enclosed combustion device that thermally oxidizes volatile organic compounds to CO and CO₂. This term does not include devices that burn municipal or hazardous waste material.

Janitorial maintenance means the upkeep of equipment or building structures that is not directly related to the manufacturing process, for example, cleaning of restroom facilities.

Lower confidence limit (LCL) approach means a set of approval criteria that must be met so that data from an alternative test method can be used in determining the capture efficiency of a control system. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

Material safety data sheet (MSDS) means the documentation required for hazardous chemicals by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR Part 1910) for a solvent, cleaning material, contact adhesive, coating, or other material that identifies select reportable hazardous ingredients of the material, safety and health considerations, and handling procedures.

Noncompliant coating/contact adhesive means a finishing material, contact adhesive, or strippable booth coating that has a VHAP content (VOC content for the strippable booth coating) greater than the emission limitation presented in Table 3 of this subpart.

Nonporous substrate means a surface that is impermeable to liquids. Examples include metal, rigid plastic, flexible vinyl, and rubber.

Normally closed container means a container that is closed unless an operator is actively engaged in activities such as emptying or filling the container.

Operating parameter value means a minimum or maximum value established for a control device or process

parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limit.

Organic solvent means a volatile organic liquid that is used for dissolving or dispersing constituents in a coating or contact adhesive, adjusting the viscosity of a coating or contact adhesive, or cleaning equipment. When used in a coating or contact adhesive, the organic solvent evaporates during drying and does not become a part of the dried film.

Overall control efficiency means the efficiency of a control system, calculated as the product of the capture and control device efficiencies, expressed as a percentage.

Permanent total enclosure means a permanently installed enclosure that completely surrounds a source of emissions such that all emissions are captured and contained for discharge through a control device. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

Recycled onsite means the reuse of an organic solvent in a process other than cleaning or washoff.

Reference method means any method of sampling and analyzing for an air pollutant that is published in Appendix A of 40 CFR part 60.

Research or laboratory facility means any stationary source whose primary purpose is to conduct research and development to develop new processes and products where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

Responsible official has the meaning given to it in 40 CFR part 70, State Operating Permit Programs (Title V permits).

Sealer means a finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. Special purpose finishing materials that are used in some finishing systems to optimize aesthetics are not sealers.

Solvent means a liquid used in a coating or contact adhesive to dissolve or disperse constituents and/or to adjust viscosity. It evaporates during drying and does not become a part of the dried film.

Stain means any color coat having a solids content by weight of no more than 8.0 percent that is applied in single or multiple coats directly to the substrate. It includes, but is not limited to, nongrain raising stains, equalizer stains, prestains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.

Storage containers means vessels or tanks, including mix equipment, used to hold finishing, gluing, cleaning, or washoff materials.

Strippable spray booth material means a coating that:

- (1) Is applied to a spray booth wall to provide a protective film to receive overspray during finishing operations;
- (2) That is subsequently peeled off and disposed; and
- (3) By achieving (1) and (2), reduces or eliminates the need to use organic solvents to clean spray booth walls.

Substrate means the surface onto which a coating or contact adhesive is applied (or into which a coating or contact adhesive is impregnated).

Temporary total enclosure means an enclosure that meets the requirements of § 63.805(e)(1) (i) through (iv) and is not permanent, but constructed only to measure the capture efficiency of pollutants emitted from a given source. Additionally, any exhaust point from the enclosure shall be at least four equivalent duct or hood diameters from each natural draft opening. For additional information, see *Guidelines for Determining Capture Efficiency*, January 1994. (Docket No. A-93-10, Item No. IV-B-1).

Thinner means a volatile liquid that is used to dilute coatings or contact adhesives (to reduce viscosity, color strength, and solids, or to modify drying conditions).

Topcoat means the last film-building finishing material that is applied in a finishing system.

Touchup and repair means the application of finishing materials to cover minor finishing imperfections.

VHAP means any volatile hazardous air pollutant listed in Table 2 to Subpart JJ.

VHAP of potential concern means any VHAP from the nonthreshold, high concern, or unrankable list in Table 6 of this subpart.

Volatile organic compound (VOC) means any organic compound which participates in atmospheric photochemical reactions, that is, any organic compound other than those which the Administrator designates as having negligible photochemical reactivity. A VOC may be measured by a reference method, an equivalent method, an alternative method, or by procedures specified under any rule. A reference method, an equivalent method, or an alternative method, however, may also measure nonreactive organic compounds. In such cases, the owner or operator may exclude the nonreactive organic compounds when determining compliance with a standard. For a list of compounds that the Administrator has designated as having negligible photochemical reactivity, refer to 40 CFR part 51.10.

Washcoat means a transparent special purpose finishing material having a solids content by weight of 12.0 percent by weight or less. Washcoats are applied over initial stains to protect, to control color, and to stiffen the wood fibers in order to aid sanding.

Washoff operations means those operations in which organic solvent is used to remove coating from wood furniture or a wood furniture component.

Wood furniture means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

Wood furniture component means any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops. However, foam seat cushions manufactured and fabricated at a facility that does not engage in any other wood furniture or wood furniture component manufacturing operation are excluded from this definition.

Wood furniture manufacturing operations means the finishing, gluing, cleaning, and washoff operations associated with the production of wood furniture or wood furniture components.

(b) The nomenclature used in this subpart has the following meaning:

(1) A_k = the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) C_c = the VHAP content of a finishing material (c), in kilograms of volatile hazardous air pollutants per kilogram of coating solids (kg VHAP/kg solids), as supplied. Also given in pounds of volatile hazardous air pollutants per pound of coating solids (lb VHAP/lb solids).

(3) C_{aj} = the concentration of VHAP in gas stream (j) exiting the control device, in parts per million by volume.

(4) C_{bi} = the concentration of VHAP in gas stream (i) entering the control device, in parts per million by volume.

(5) C_{di} = the concentration of VHAP in gas stream (i) entering the control device from the affected source, in parts per million by volume.

(6) C_{fk} = the concentration of VHAP in uncontrolled gas stream (k) emitted directly to the atmosphere from the affected source, in parts per million by volume.

(7) E = the emission limit achieved by an emission point or a set of emission points, in kg VHAP/kg solids (lb VHAP/lb solids).

(8) F = the control device efficiency, expressed as a fraction.

(9) FV = the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(10) G = the VHAP content of a contact adhesive, in kg VHAP/kg solids (lb VHAP/lb solids), as applied.

(11) M = the mass of solids in finishing material used monthly, kg solids/month (lb solids/month).

(12) N = the capture efficiency, expressed as a fraction.

(13) Q_{aj} = the volumetric flow rate of gas stream (j) exiting the control device, in dry standard cubic meters per hour.

(14) Q_{bi} = the volumetric flow rate of gas stream (i) entering the control device, in dry standard cubic meters per hour.

(15) Q_{di} = the volumetric flow rate of gas stream (i) entering the control device from the emission point, in dry standard cubic meters per hour.

(16) Q_{fk} = the volumetric flow rate of uncontrolled gas stream (k) emitted directly to the atmosphere from the emission point, in dry standard cubic meters per hour.

(17) $Q_{in i}$ = the volumetric flow rate of gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

(18) $Q_{out j}$ = the volumetric flow rate of gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

(19) R = the overall efficiency of the control system, expressed as a percentage.

(20) S = the VHAP content of a solvent, expressed as a weight fraction, added to finishing materials.

(21) W = the amount of solvent, in kilograms (pounds), added to finishing materials during the monthly averaging period.

(22) ac = after the control system is installed and operated.

(23) bc = before control.

[60 FR 62936, Dec. 7, 1995, as amended at 62 FR 30260, June 3, 1997; 62 FR 31363, June 9, 1997]

§ 63.802 Emission limits.

(a) Each owner or operator of an existing affected source subject to this subpart shall:

(1) Limit VHAP emissions from finishing operations by meeting the emission limitations for existing sources presented in Table 3 of this subpart, using any of the compliance methods in § 63.804(a). To determine VHAP emissions from a finishing material containing formaldehyde or styrene, the owner or operator of the affected source shall use the methods presented in § 63.803(l)(2) for determining styrene and formaldehyde usage.

(2) Limit VHAP emissions from contact adhesives by achieving a VHAP limit for contact adhesives based on the following criteria:

(i) For foam adhesives (contact adhesives used for upholstery operations)

used in products that meet the upholstered seating flammability requirements of California Technical Bulletin 116, 117, or 133, the Business and Institutional Furniture Manufacturers Association's (BIFMA's) X5.7, UFAC flammability testing, or any similar requirements from local, State, or Federal fire regulatory agencies, the VHAP content of the adhesive shall not exceed 1.8 kg VHAP/kg solids (1.8 lb VHAP/lb solids), as applied; or

(ii) For all other contact adhesives (including foam adhesives used in products that do not meet the standards presented in paragraph (a)(2)(i) of this section, but excluding aerosol adhesives and excluding contact adhesives applied to nonporous substrates, the VHAP content of the adhesive shall not exceed 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied.

(3) Limit HAP emissions from strippable spray booth coatings by using coatings that contain no more than 0.8 kg VOC/kg solids (0.8 lb VOC/lb solids), as applied.

(b) Each owner or operator of a new affected source subject to this subpart shall:

(1) Limit VHAP emissions from finishing operations by meeting the emission limitations for new sources presented in Table 3 of this subpart using any of the compliance methods in § 63.804(d). To determine VHAP emissions from a finishing material containing formaldehyde or styrene, the owner or operator of the affected source shall use the methods presented in § 63.803(l)(2) for determining styrene and formaldehyde usage.

(2) Limit VHAP emissions from contact adhesives by achieving a VHAP limit for contact adhesives, excluding aerosol adhesives and excluding contact adhesives applied to nonporous substrates, of no greater than 0.2 kg VHAP/kg solids (0.2 lb VHAP/lb solids), as applied, using either of the compliance methods in § 63.804(e).

(3) Limit HAP emissions from strippable spray booth coatings by using coatings that contain no more than 0.8 kg VOC/kg solids (0.8 lb VOC/lb solids), as applied.

§ 63.803 Work practice standards.

(a) *Work practice implementation plan.* Each owner or operator of an affected source subject to this subpart shall prepare and maintain a written work practice implementation plan that defines environmentally desirable work practices for each wood furniture manufacturing operation and addresses each of the work practice standards presented in paragraphs (b) through (l) of this section. The plan shall be developed no more than 60 days after the compliance date. The written work practice implementation plan shall be available for inspection by the Administrator upon request. If the Administrator determines that the work practice implementation plan does not adequately address each of the topics specified in paragraphs (b) through (l) of this section or that the plan does not include sufficient mechanisms for ensuring that the work practice standards are being implemented, the Administrator may require the affected source to modify the plan. Revisions or modifications to the plan do not require a revision of the source's Title V permit.

(b) *Operator training course.* Each owner or operator of an affected source shall train all new and existing personnel, including contract personnel, who are involved in finishing, gluing, cleaning, and washoff operations, use of manufacturing equipment, or implementation of the requirements of this subpart. All new personnel, those hired after the compliance date of the standard, shall be trained upon hiring. All existing personnel, those hired before the compliance date of the standard, shall be trained within six months of the compliance date of the standard. All personnel shall be given refresher training annually. The affected source shall maintain a copy of the training program with the work practice implementation plan. The training program shall include, at a minimum, the following:

(1) A list of all current personnel by name and job description that are required to be trained;

(2) An outline of the subjects to be covered in the initial and refresher training for each position or group of personnel;

(3) Lesson plans for courses to be given at the initial and the annual refresher training that include, at a minimum, appropriate application techniques, appropriate cleaning and washoff procedures, appropriate equipment setup and adjustment to minimize finishing material usage and overspray, and appropriate management of cleanup wastes; and

(4) A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion.

(c) *Inspection and maintenance plan.* Each owner or operator of an affected source shall prepare and maintain with the work practice implementation plan a written leak inspection and maintenance plan that specifies:

(1) A minimum visual inspection frequency of once per month for all equipment used to transfer or apply coatings, adhesives, or organic solvents;

(2) An inspection schedule;

(3) Methods for documenting the date and results of each inspection and any repairs that were made;

(4) The timeframe between identifying the leak and making the repair, which adheres, at a minimum, to the following schedule:

(i) A first attempt at repair (e.g., tightening of packing glands) shall be made no later than five calendar days after the leak is detected; and

(ii) Final repairs shall be made within 15 calendar days after the leak is detected, unless the leaking equipment is to be replaced by a new purchase, in which case repairs shall be completed within three months.

(d) *Cleaning and washoff solvent accounting system.* Each owner or operator of an affected source shall develop an organic solvent accounting form to record:

(1) The quantity and type of organic solvent used each month for washoff and cleaning, as defined in § 63.801 of this subpart;

(2) The number of pieces washed off, and the reason for the washoff; and

(3) The quantity of spent solvent generated from each washoff and cleaning operation each month, and whether it is recycled onsite or disposed offsite.

(e) *Chemical composition of cleaning and washoff solvents.* Each owner or op-

erator of an affected source shall not use cleaning or washoff solvents that contain any of the pollutants listed in Table 4 to this subpart, in concentrations subject to MSDS reporting as required by OSHA.

(f) *Spray booth cleaning.* Each owner or operator of an affected source shall not use compounds containing more than 8.0 percent by weight of VOC for cleaning spray booth components other than conveyors, continuous coaters and their enclosures, or metal filters, unless the spray booth is being refurbished. If the spray booth is being refurbished, that is the spray booth coating or other protective material used to cover the booth is being replaced, the affected source shall use no more than 1.0 gallon of organic solvent per booth to prepare the surface of the booth prior to applying the booth coating.

(g) *Storage requirements.* Each owner or operator of an affected source shall use normally closed containers for storing finishing, gluing, cleaning, and washoff materials.

(h) *Application equipment requirements.* Each owner or operator of an affected source shall use conventional air spray guns to apply finishing materials only under any of the following circumstances:

(1) To apply finishing materials that have a VOC content no greater than 1.0 lb VOC/lb solids, as applied;

(2) For touchup and repair under the following conditions:

(i) The touchup and repair occurs after completion of the finishing operation; or

(ii) The touchup and repair occurs after the application of stain and before the application of any other type of finishing material, and the materials used for touchup and repair are applied from a container that has a volume of no more than 2.0 gallons.

(3) When spray is automated, that is, the spray gun is aimed and triggered automatically, not manually;

(4) When emissions from the finishing application station are directed to a control device;

(5) The conventional air gun is used to apply finishing materials and the

cumulative total usage of that finishing material is no more than 5.0 percent of the total gallons of finishing material used during that semiannual period; or

(6) The conventional air gun is used to apply stain on a part for which it is technically or economically infeasible to use any other spray application technology.

The affected source shall demonstrate technical or economic infeasibility by submitting to the Administrator a videotape, a technical report, or other documentation that supports the affected source's claim of technical or economic infeasibility. The following criteria shall be used, either independently or in combination, to support the affected source's claim of technical or economic infeasibility:

(i) The production speed is too high or the part shape is too complex for one operator to coat the part and the application station is not large enough to accommodate an additional operator; or

(ii) The excessively large vertical spray area of the part makes it difficult to avoid sagging or runs in the stain.

(i) *Line cleaning.* Each owner or operator of an affected source shall pump or drain all organic solvent used for line cleaning into a normally closed container.

(j) *Gun cleaning.* Each owner or operator of an affected source shall collect all organic solvent used to clean spray guns into a normally closed container.

(k) *Washoff operations.* Each owner or operator of an affected source shall control emissions from washoff operations by:

(1) Using normally closed tanks for washoff; and

(2) Minimizing dripping by tilting or rotating the part to drain as much solvent as possible.

(l) *Formulation assessment plan for finishing operations.* Each owner or operator of an affected source shall prepare and maintain with the work practice implementation plan a formulation assessment plan that:

(1) Identifies VHAP from the list presented in Table 5 of this subpart that are being used in finishing operations by the affected source;

(2) Establishes a baseline level of usage by the affected source, for each VHAP identified in paragraph (l)(1) of this section. The baseline usage level shall be the highest annual usage from 1994, 1995, or 1996, for each VHAP identified in paragraph (l)(1) of this section. For formaldehyde, the baseline level of usage shall be based on the amount of free formaldehyde present in the finishing material when it is applied. For styrene, the baseline level of usage shall be an estimate of unreacted styrene, which shall be calculated by multiplying the amount of styrene monomer in the finishing material, when it is applied, by a factor of 0.16. Sources using a control device to reduce emissions may adjust their usage based on the overall control efficiency of the control system, which is determined using the equation in § 63.805 (d) or (e).

(3) Tracks the annual usage of each VHAP identified in (l)(1) by the affected source that is present in amounts subject to MSDS reporting as required by OSHA.

(4) If, after November 1998, the annual usage of the VHAP identified in paragraph (l)(1) exceeds its baseline level, then the owner or operator of the affected source shall provide a written notification to the permitting authority that describes the amount of the increase and explains the reasons for exceedance of the baseline level. The following explanations would relieve the owner or operator from further action, unless the affected source is not in compliance with any State regulations or requirements for that VHAP:

(i) The exceedance is no more than 15.0 percent above the baseline level;

(ii) Usage of the VHAP is below the de minimis level presented in Table 5 of this subpart for that VHAP (sources using a control device to reduce emissions may adjust their usage based on the overall control efficiency of the control system, which is determined using the procedures in § 63.805 (d) or (e);

(iii) The affected source is in compliance with its State's air toxic regulations or guidelines for the VHAP; or

(iv) The source of the pollutant is a finishing material with a VOC content of no more than 1.0 kg VOC/kg solids (1.0 lb VOC/lb solids), as applied.

(5) If none of the above explanations are the reason for the increase, the owner or operator shall confer with the permitting authority to discuss the reason for the increase and whether there are practical and reasonable technology-based solutions for reducing the usage. The evaluation of whether a technology is reasonable and practical shall be based on cost, quality, and marketability of the product, whether the technology is being used successfully by other wood furniture manufacturing operations, or other criteria mutually agreed upon by the permitting authority and owner or operator. If there are no practical and reasonable solutions, the facility need take no further action. If there are solutions, the owner or operator shall develop a plan to reduce usage of the pollutant to the extent feasible. The plan shall address the approach to be used to reduce emissions, a timetable for implementing the plan, and a schedule for submitting notification of progress.

(6) If after November 1998, an affected source uses a VHAP of potential concern for which a baseline level has not been previously established, then the baseline level shall be established as the de minimis level, based on 70 year exposure levels and data provided in the proposed rulemaking pursuant to Section 112(g) of the CAA, for that pollutant. A list of VHAP of potential concern is provided in Table 6 of this subpart. If usage of the VHAP of potential concern exceeds the de minimis level, then the affected source shall provide an explanation to the permitting authority that documents the reason for exceedance of the de minimis level. If the explanation is not one of those listed in paragraphs (l)(4)(i) through (l)(4)(iv), the affected source shall follow the procedures established in (l)(5).

§ 63.804 Compliance procedures and monitoring requirements.

(a) The owner or operator of an existing affected source subject to § 63.802(a)(1) shall comply with those provisions using any of the methods presented in § 63.804 (a)(1) through (a)(4).

(1) Calculate the average VHAP content for all finishing materials used at

the facility using Equation 1, and maintain a value of E no greater than 1.0;

$$E = (M_{c1} C_{c1} + M_{c2} C_{c2} + \dots + M_{cn} C_{cn} + S_1 W_1 + S_2 W_2 + \dots + S_n W_n) / (M_{c1} + M_{c2} + \dots + M_{cn}) \quad \text{Equation 1}$$

(2) Use compliant finishing materials according to the following criteria:

(i) Demonstrate that each stain, sealer, and topcoat has a VHAP content of no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight by maintaining certified product data sheets for each coating and thinner;

(ii) Demonstrate that each washcoat, basecoat, and enamel that is purchased pre-made, that is, it is not formulated onsite by thinning another finishing material, has a VHAP content of no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight by maintaining certified product data sheets for each coating and thinner; and

(iii) Demonstrate that each washcoat, basecoat, and enamel that is formulated at the affected source is formulated using a finishing material containing no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids) and a thinner containing no more than 3.0 percent VHAP by weight.

(3) Use a control system with an overall control efficiency (R) such that the value of E_{ac} in Equation 2 is no greater than 1.0.

$$R = [(E_{bc} - E_{ac}) / E_{bc}] (100) \quad \text{Equation 2}$$

The value of E_{bc} in Equation 2 shall be calculated using Equation 1; or

(4) Use any combination of an averaging approach, as described in paragraph (a)(1) of this section, compliant finishing materials, as described in paragraph (a)(2) of this section, and a control system, as described in paragraph (a)(3) of this section.

(b) The owner or operator of an affected source subject to § 63.802(a)(2)(i) shall comply with the provisions by using compliant foam adhesives with a VHAP content no greater than 1.8 kg VHAP/kg solids (1.8 lb VHAP/lb solids), as applied.

(c) The owner or operator of an affected source subject to § 63.802(a)(2)(ii)

shall comply with those provisions by using either of the methods presented in § 63.804 (c)(1) and (c)(2).

(1) Use compliant contact adhesives with a VHAP content no greater than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied; or

(2) Use a control system with an overall control efficiency (R) such that the value of G_{ac} is no greater than 1.0.

$$R = [(G_{bc} - G_{ac}) / G_{bc}] (100) \quad \text{Equation 3}$$

(d) The owner or operator of a new affected source subject to § 63.802(b)(1) may comply with those provisions by using any of the following methods:

(1) Calculate the average VHAP content across all finishing materials used at the facility using Equation 1, and maintain a value of E no greater than 0.8;

(2) Use compliant finishing materials according to the following criteria:

(i) Demonstrate that each sealer and topcoat has a VHAP content of no more than 0.8 kg VHAP/kg solids (0.8 lb VHAP/lb solids), as applied, each stain has a VHAP content of no more than 1.0 kg VHAP/kg solids (1.0 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight;

(ii) Demonstrate that each washcoat, basecoat, and enamel that is purchased pre-made, that is, it is not formulated onsite by thinning another finishing material, has a VHAP content of no more than 0.8 kg VHAP/kg solids (0.8 lb VHAP/lb solids), as applied, and each thinner contains no more than 10.0 percent VHAP by weight; and

(iii) Demonstrate that each washcoat, basecoat, and enamel that is formulated onsite is formulated using a finishing material containing no more than 0.8 kg VHAP/kg solids (0.8 lb VHAP/lb solids) and a thinner containing no more than 3.0 percent HAP by weight.

(3) Use a control system with an overall control efficiency (R) such that the value of E_{ac} in Equation 4 is no greater than 0.8.

$$R = [(E_{bc} - E_{ac}) / E_{bc}] (100) \quad \text{Equation 4}$$

The value of E_{bc} in Equation 4 shall be calculated using Equation 1; or

(4) Use any combination of an averaging approach, as described in (d)(1), compliant finishing materials, as de-

scribed in (d)(2), and a control system, as described in (d)(3).

(e) The owner or operator of a new affected source subject to § 63.802(b)(2) shall comply with the provisions using either of the following methods:

(1) Use compliant contact adhesives with a VHAP content no greater than 0.2 kg VHAP/kg solids (0.2 lb VHAP/lb solids), as applied; or

(2) Use a control system with an overall control efficiency (R) such that the value of G_{ac} in Equation 3 is no greater than 0.2.

(f) *Initial compliance.* (1) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(1) or (d)(1) shall submit the results of the averaging calculation (Equation 1) for the first month with the initial compliance status report required by § 63.807(b). The first month's calculation shall include data for the entire month in which the compliance date falls. For example, if the source's compliance date is November 21, 1997, the averaging calculation shall include data from November 1, 1997 to November 30, 1997.

(2) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(2) or (d)(2) shall submit an initial compliance status report, as required by § 63.807(b), stating that compliant stains, washcoats, sealers, topcoats, basecoats, enamels, and thinners, as applicable, are being used by the affected source.

(3) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that are complying through the procedures established in § 63.804 (a)(2) or (d)(2) and are applying coatings using continuous coaters shall demonstrate initial compliance by:

(i) Submitting an initial compliance status report, as required by § 63.807(b), stating that compliant coatings, as determined by the VHAP content of the coating in the reservoir and the VHAP content as calculated from records, and compliant thinners are being used; or

(ii) Submitting an initial compliance status report, as required by § 63.807(b),

stating that compliant coatings, as determined by the VHAP content of the coating in the reservoir, are being used; the viscosity of the coating in the reservoir is being monitored; and compliant thinners are being used. The affected source shall also submit data that demonstrate that viscosity is an appropriate parameter for demonstrating compliance.

(4) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(3) or (d)(3) shall demonstrate initial compliance by:

(i) Submitting a monitoring plan that identifies each operating parameter to be monitored for the capture device and discusses why each parameter is appropriate for demonstrating continuous compliance;

(ii) Conducting an initial performance test as required under § 63.7 using the procedures and test methods listed in § 63.7 and § 63.805 (c) and (d) or (e);

(iii) Calculating the overall control efficiency (R) following the procedures in § 63.805 (d) or (e); and

(iv) Determining those operating conditions critical to determining compliance and establishing one or more operating parameters that will ensure compliance with the standard.

(A) For compliance with a thermal incinerator, minimum combustion temperature shall be the operating parameter.

(B) For compliance with a catalytic incinerator equipped with a fixed catalyst bed, the minimum gas temperature both upstream and downstream of the catalyst bed shall be the operating parameter.

(C) For compliance with a catalytic incinerator equipped with a fluidized catalyst bed, the minimum gas temperature upstream of the catalyst bed and the pressure drop across the catalyst bed shall be the operating parameters.

(D) For compliance with a carbon adsorber, the operating parameters shall be the total regeneration mass stream flow for each regeneration cycle and the carbon bed temperature after each regeneration, or the concentration level of organic compounds exiting the adsorber, unless the owner

or operator requests and receives approval from the Administrator to establish other operating parameters.

(E) For compliance with a control device not listed in this section, one or more operating parameter values shall be established using the procedures identified in § 63.804(g)(4)(vi).

(v) Owners or operators complying with § 63.804(f)(4) shall calculate each site-specific operating parameter value as the arithmetic average of the maximum or minimum operating parameter values, as appropriate, that demonstrate compliance with the standards, during the three test runs required by § 63.805(c)(1).

(5) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(2) or (b)(2) that comply through the procedures established in § 63.804 (b), (c)(1), or (e)(1), shall submit an initial compliance status report, as required by § 63.807(b), stating that compliant contact adhesives are being used by the affected source.

(6) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(2)(ii) or (b)(2) that comply through the procedures established in § 63.804 (c)(2) or (e)(2), shall demonstrate initial compliance by:

(i) Submitting a monitoring plan that identifies each operating parameter to be monitored for the capture device and discusses why each parameter is appropriate for demonstrating continuous compliance;

(ii) Conducting an initial performance test as required under § 63.7 using the procedures and test methods listed in § 63.7 and § 63.805 (c) and (d) or (e);

(iii) Calculating the overall control efficiency (R) following the procedures in § 63.805 (d) or (e); and

(iv) Determining those operating conditions critical to determining compliance and establishing one or more operating parameters that will ensure compliance with the standard.

(A) For compliance with a thermal incinerator, minimum combustion temperature shall be the operating parameter.

(B) For compliance with a catalytic incinerator equipped with a fixed catalyst bed, the minimum gas temperature both upstream and downstream of

the catalyst shall be the operating parameter.

(C) For compliance with a catalytic incinerator equipped with a fluidized catalyst bed, the minimum gas temperature upstream of the catalyst bed and the pressure drop across the catalyst bed shall be the operating parameters.

(v) Owners or operators complying with § 63.804(f)(6) shall calculate each site-specific operating parameter value as the arithmetic average of the maximum or minimum operating values as appropriate, that demonstrate compliance with the standards, during the three test runs required by § 63.805(c)(1).

(7) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(3) or (b)(3) shall submit an initial compliance status report, as required by § 63.807(b), stating that compliant strippable spray booth coatings are being used by the affected source.

(8) Owners or operators of an affected source subject to the work practice standards in § 63.803 shall submit an initial compliance status report, as required by § 63.807(b), stating that the work practice implementation plan has been developed and procedures have been established for implementing the provisions of the plan.

(g) *Continuous compliance demonstrations.* (1) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(1) or (d)(1) shall demonstrate continuous compliance by submitting the results of the averaging calculation (Equation 1) for each month within that semiannual period and submitting a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that the value of (E), as calculated by Equation 1, is no greater than 1.0 for existing sources or 0.8 for new sources. An affected source is in violation of the standard if E is greater than 1.0 for existing sources or 0.8 for new sources for any month. A violation of the monthly average is a separate violation of the standard for each day of operation during the month, unless the affected source can demonstrate through records that the violation of

the monthly average can be attributed to a particular day or days during the period.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(2) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in § 63.804 (a)(2) or (d)(2) shall demonstrate continuous compliance by using compliant coatings and thinners, maintaining records that demonstrate the coatings and thinners are compliant, and submitting a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that compliant stains, washcoats, sealers, topcoats, basecoats, enamels, and thinners, as applicable, have been used each day in the semiannual reporting period or should otherwise identify the periods of noncompliance and the reasons for noncompliance. An affected source is in violation of the standard whenever a noncompliant coating, as demonstrated by records or by a sample of the coating, is used.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(3) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that are complying through the procedures established in § 63.804 (a)(2) or (d)(2) and are applying coatings using continuous coaters shall demonstrate continuous compliance by following the procedures in paragraph (g)(3) (i) or (ii) of this section.

(i) Using compliant coatings, as determined by the VHAP content of the coating in the reservoir and the VHAP content as calculated from records, using compliant thinners, and submitting a compliance certification with the semiannual report required by § 63.807(c).

(A) The compliance certification shall state that compliant coatings

have been used each day in the semi-annual reporting period, or should otherwise identify the days of noncompliance and the reasons for noncompliance. An affected source is in violation of the standard whenever a noncompliant coating, as determined by records or by a sample of the coating, is used. Use of a noncompliant coating is a separate violation for each day the noncompliant coating is used.

(B) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(ii) Using compliant coatings, as determined by the VHAP content of the coating in the reservoir, using compliant thinners, maintaining a viscosity of the coating in the reservoir that is no less than the viscosity of the initial coating by monitoring the viscosity with a viscosity meter or by testing the viscosity of the initial coating and retesting the coating in the reservoir each time solvent is added, maintaining records of solvent additions, and submitting a compliance certification with the semiannual report required by § 63.807(c).

(A) The compliance certification shall state that compliant coatings, as determined by the VHAP content of the coating in the reservoir, have been used each day in the semiannual reporting period. Additionally, the certification shall state that the viscosity of the coating in the reservoir has not been less than the viscosity of the initial coating, that is, the coating that is initially mixed and placed in the reservoir, for any day in the semiannual reporting period.

(B) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(C) An affected source is in violation of the standard when a sample of the as-applied coating exceeds the applicable limit established in § 63.804 (a)(2) or (d)(2), as determined using EPA Method 311, or the viscosity of the coating in the reservoir is less than the viscosity of the initial coating.

(4) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(1) or (b)(1) that comply through the procedures established in

§ 63.804 (a)(3) or (d)(3) shall demonstrate continuous compliance by installing, calibrating, maintaining, and operating the appropriate monitoring equipment according to manufacturer's specifications. The owner or operator shall also submit the excess emissions and continuous monitoring system performance report and summary report required by § 63.807(d) and § 63.10(e) of subpart A.

(i) Where a capture/control device is used, a device to monitor each site-specific operating parameter established in accordance with § 63.804(f)(6)(i) is required.

(ii) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(A) Where a thermal incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(B) Where a catalytic incinerator equipped with a fixed catalyst bed is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(C) Where a catalytic incinerator equipped with a fluidized catalyst bed is used, a temperature monitoring device shall be installed in the gas stream immediately before the bed. In addition, a pressure monitoring device shall be installed to determine the pressure drop across the catalyst bed. The pressure drop shall be measured monthly at a constant flow rate.

(iii) Where a carbon adsorber is used one of the following is required:

(A) An integrating stream flow monitoring device having an accuracy of ± 10 percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, having an accuracy of ± 1 percent of the temperature being monitored or ± 0.5 °C, whichever is greater, and capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle;

(B) An organic monitoring device, equipped with a continuous recorder,

to indicate the concentration level of organic compounds exiting the carbon adsorber; or

(C) Any other monitoring device that has been approved by the Administrator in accordance with § 63.804(f)(4)(iv)(D).

(iv) Owners or operators of an affected source shall not operate the capture or control device at a daily average value greater than or less than (as appropriate) the operating parameter values. The daily average value shall be calculated as the average of all values for a monitored parameter recorded during the operating day.

(v) Owners or operators of an affected source that are complying through the use of a catalytic incinerator equipped with a fluidized catalyst bed shall maintain a constant pressure drop, measured monthly, across the catalyst bed.

(vi) An owner or operator who uses a control device not listed in § 63.804(f)(4) shall submit, for the Administrator's approval, a description of the device, test data verifying performance, and appropriate site-specific operating parameters that will be monitored to demonstrate continuous compliance with the standard.

(5) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(2) (i) or (ii) or (b)(2) that comply through the procedures established in § 63.804 (b), (c)(1), or (e)(1), shall submit a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that compliant contact and/or foam adhesives have been used each day in the semiannual reporting period, or should otherwise identify each day noncompliant contact and/or foam adhesives were used. Each day a noncompliant contact or foam adhesive is used is a single violation of the standard.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(6) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(2)(ii) or (b)(2) that comply through the procedures established in § 63.804 (c)(2) or (e)(2), shall dem-

onstrate continuous compliance by installing, calibrating, maintaining, and operating the appropriate monitoring equipment according to the manufacturer's specifications. The owner or operator shall also submit the excess emissions and continuous monitoring system performance report and summary report required by § 63.807(d) and § 63.10(e) of subpart A of this part.

(i) Where a capture/control device is used, a device to monitor each site-specific operating parameter established in accordance with § 63.804(f)(6)(i) is required.

(ii) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(A) Where a thermal incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(B) Where a catalytic incinerator equipped with a fixed catalyst bed is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(C) Where a catalytic incinerator equipped with a fluidized catalyst bed is used, a temperature monitoring device shall be installed in the gas stream immediately before the bed. In addition, a pressure monitoring device shall be installed to measure the pressure drop across the catalyst bed. The pressure drop shall be measured monthly at a constant flow rate.

(iii) Where a carbon adsorber is used one of the following is required:

(A) An integrating stream flow monitoring device having an accuracy of ± 10 percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, having an accuracy of ± 1 percent of the temperature being monitored or ± 0.5 °C, whichever is greater, and capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle;

(B) An organic monitoring device, equipped with a continuous recorder, to indicate the concentration level of

organic compounds exiting the carbon adsorber; or

(C) Any other monitoring device that has been approved by the Administrator in accordance with § 63.804(f)(4)(iv)(D).

(iv) Owners or operators of an affected source shall not operate the capture or control device at a daily average value greater than or less than (as appropriate) the operating parameter values. The daily average value shall be calculated as the average of all values for a monitored parameter recorded during the operating day.

(v) Owners or operators of an affected source that are complying through the use of a catalytic incinerator equipped with a fluidized catalyst bed shall maintain a constant pressure drop, measured monthly, across the catalyst bed.

(vi) An owner or operator using a control device not listed in this section shall submit to the Administrator a description of the device, test data verifying the performance of the device, and appropriate operating parameter values that will be monitored to demonstrate continuous compliance with the standard. Compliance using this device is subject to the Administrator's approval.

(7) Owners or operators of an affected source subject to the provisions of § 63.802 (a)(3) or (b)(3) shall submit a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that compliant strippable spray booth coatings have been used each day in the semiannual reporting period, or should otherwise identify each day noncompliant materials were used. Each day a noncompliant strippable booth coating is used is a single violation of the standard.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

(8) Owners or operators of an affected source subject to the work practice standards in § 63.803 shall submit a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that the work practice implementation plan is being followed, or should

otherwise identify the provisions of the plan that have not been implemented and each day the provisions were not implemented. During any period of time that an owner or operator is required to implement the provisions of the plan, each failure to implement an obligation under the plan during any particular day is a violation.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

§ 63.805 Performance test methods.

(a) The EPA Method 311 of appendix A of part 63 shall be used in conjunction with formulation data to determine the VHAP content of the liquid coating. Formulation data shall be used to identify VHAP present in the coating. The EPA Method 311 shall then be used to quantify those VHAP identified through formulation data. The EPA Method 311 shall not be used to quantify HAP such as styrene and formaldehyde that are emitted during the cure. The EPA Method 24 (40 CFR part 60, appendix A) shall be used to determine the solids content by weight and the density of coatings. If it is demonstrated to the satisfaction of the Administrator that a coating does not release VOC or HAP byproducts during the cure, for example, all VOC and HAP present in the coating is solvent, then batch formulation information shall be accepted. The owner or operator of an affected source may request approval from the Administrator to use an alternative method for determining the VHAP content of the coating. In the event of any inconsistency between the EPA Method 24 or Method 311 test data and a facility's formulation data, that is, if the EPA Method 24/311 value is higher, the EPA Method 24/311 test shall govern unless after consultation, a regulated source could demonstrate to the satisfaction of the enforcement agency that the formulation data were correct. Sampling procedures shall follow the guidelines presented in "Standard Procedures for Collection of Coating and Ink Samples for VOC Content Analysis by Reference Method 24 and Reference Method 24A," EPA-340/1-91-010. (Docket No. A-93-10, Item No. IV-A-1).

(b) Owners or operators demonstrating compliance in accordance with § 63.804 (f)(4) or (f)(6) and § 63.804 (g)(4) or (g)(6), or complying with any of the other emission limits of § 63.802 by operating a capture or control device shall determine the overall control efficiency of the control system (R) as the product of the capture and control device efficiency, using the test methods cited in § 63.805(c) and the procedures in § 63.805 (d) or (e).

(c) When an initial compliance demonstration is required by § 63.804 (f)(4) or (f)(6) of this subpart, the procedures in paragraphs (c)(1) through (c)(6) of this section shall be used in determining initial compliance with the provisions of this subpart.

(1) The EPA Method 18 (40 CFR part 60, appendix A) shall be used to determine the HAP concentration of gaseous air streams. The test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(2) The EPA Method 1 or 1A (40 CFR part 60, appendix A) shall be used for sample and velocity traverses.

(3) The EPA Method 2, 2A, 2C, or 2D (40 CFR part 60, appendix A) shall be used to measure velocity and volumetric flow rates.

(4) The EPA Method 3 (40 CFR part 60, appendix A) shall be used to analyze the exhaust gases.

(5) The EPA Method 4 (40 CFR part 60, appendix A) shall be used to measure the moisture in the stack gas.

(6) The EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(d) Each owner or operator of an affected source demonstrating compliance in accordance with § 63.804 (f)(4) or (f)(6) shall perform a gaseous emission test using the following procedures:

(1) Construct the overall HAP emission reduction system so that all volu-

metric flow rates and total HAP emissions can be accurately determined by the applicable test methods specified in § 63.805(c) (1) through (6);

(2) Determine capture efficiency from the affected emission point(s) by capturing, venting, and measuring all HAP emissions from the affected emission point(s). During a performance test, the owner or operator shall isolate affected emission point(s) located in an area with other nonaffected gaseous emission sources from all other gaseous emission point(s) by any of the following methods:

(i) Build a temporary total enclosure (see § 63.801) around the affected emission point(s); or

(ii) Use the building that houses the process as the enclosure (see § 63.801);

(iii) Use any alternative protocol and test method provided they meet either the requirements of the data quality objective (DQO) approach or the lower confidence level (LCL) approach (see § 63.801);

(iv) Shut down all nonaffected HAP emission point(s) and continue to exhaust fugitive emissions from the affected emission point(s) through any building ventilation system and other room exhausts such as drying ovens. All exhaust air must be vented through stacks suitable for testing; or

(v) Use another methodology approved by the Administrator provided it complies with the EPA criteria for acceptance under part 63, appendix A, Method 301.

(3) Operate the control device with all affected emission points that will subsequently be delivered to the control device connected and operating at maximum production rate;

(4) Determine the efficiency (F) of the control device using the following equation:

$$F = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^p Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}} \quad (\text{Equation 5})$$

(5) Determine the efficiency (N) of the capture system using the following equation:

$$N = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^p Q_{fk} C_{fk}} \quad (\text{Equation 6})$$

(6) For each affected source complying with § 63.802(a)(1) in accordance with § 63.804(a)(3), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of E_{ac} in Equation 2 is no greater than 1.0.

(7) For each new affected source complying with § 63.802(b)(1) in accordance with § 63.804(d)(3), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of E_{ac} in Equation 4 is no greater than 0.8.

(8) For each affected source complying with § 63.802(a)(2)(ii) in accordance with § 63.804(c)(2), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of G_{ac} in Equation 3 is no greater than 1.0.

(9) For each new affected source complying with § 63.802(b)(2) in accordance with § 63.804(e)(2), compliance is demonstrated if the product of (F×N)(100) yields a value (R) such that the value of G_{ac} in Equation 3 is no greater than 0.2.

(e) An alternative method to the compliance method in § 63.805(d) is the installation of a permanent total enclosure around the affected emission point(s). A permanent total enclosure presents prima facie evidence that all HAP emissions from the affected emission point(s) are directed to the control device. Each affected source that complies using a permanent total enclosure shall:

(1) Demonstrate that the total enclosure meets the requirements in paragraphs (e)(1) (i) through (iv). The owner or operator of an enclosure that does not meet these requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all HAP emissions from the affected emission point(s) are contained and vented to the control device. The requirements for automatic approval are as follows:

(i) The total area of all natural draft openings shall not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(ii) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(iii) The average inward face velocity (FV) across all natural draft openings shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(A) All forced makeup air ducts and all exhaust ducts are constructed so that the volumetric flow rate in each can be accurately determined by the test methods specified in § 63.805 (c)(2) and (3). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(B) Determine FV by the following equation:

$$FV = \frac{\sum_{j=1}^n Q_{out j} - \sum_{i=1}^p Q_{in i}}{\sum_{k=1}^q A_k} \quad (\text{Equation 7})$$

(iv) All access doors and windows whose areas are not included as natural draft openings and are not included in the calculation of FV shall be closed during routine operation of the process.

(2) Determine the control device efficiency using Equation (5), and the test methods and procedures specified in § 63.805 (c)(1) through (6).

(3) For each affected source complying with § 63.802(a)(1) in accordance with § 63.804(a)(3), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N=1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of E_{ac} in Equation 2 is no greater than 1.0.

(4) For each new affected source complying with § 63.802(b)(1) in accordance with § 63.804(d)(3), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N = 1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of E_{ac} in Equation 4 is no greater than 0.8.

(5) For each affected source complying with § 63.802(a)(2)(ii) in accordance with § 63.804(c)(2), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N=1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of G_{ac} in Equation 3 is no greater than 1.0.

(6) For each new affected source complying with § 63.802(b)(2) in accordance with § 63.804(e)(2), compliance is demonstrated if:

(i) The installation of a permanent total enclosure is demonstrated (N=1);

(ii) The value of F is determined from Equation (5); and

(iii) The product of (F×N)(100) yields a value (R) such that the value of G_{ac} in Equation 3 is no greater than 0.2.

§ 63.806 Recordkeeping requirements.

(a) The owner or operator of an affected source subject to this subpart shall fulfill all recordkeeping requirements of § 63.10 of subpart A, according to the applicability criteria in § 63.800(d) of this subpart.

(b) The owner or operator of an affected source subject to the emission limits in § 63.802 of this subpart shall maintain records of the following:

(1) A certified product data sheet for each finishing material, thinner, contact adhesive, and strippable spray booth coating subject to the emission limits in § 63.802; and

(2) The VHAP content, in kg VHAP/kg solids (lb VHAP/lb solids), as applied, of each finishing material and contact adhesive subject to the emission limits in § 63.802; and

(3) The VOC content, in kg VOC/kg solids (lb VOC/lb solids), as applied, of each strippable booth coating subject to the emission limits in § 63.802 (a)(3) or (b)(3).

(c) The owner or operator of an affected source following the compliance method in § 63.804 (a)(1) or (d)(1) shall maintain copies of the averaging calculation for each month following the compliance date, as well as the data on the quantity of coatings and thinners used that is necessary to support the calculation of E in Equation 1.

(d) The owner or operator of an affected source following the compliance procedures of § 63.804 (f)(3)(ii) and (g)(3)(ii) shall maintain the records required by § 63.806(b) as well as records of the following:

(1) Solvent and coating additions to the continuous coater reservoir;

(2) Viscosity measurements; and

(3) Data demonstrating that viscosity is an appropriate parameter for demonstrating compliance.

(e) The owner or operator of an affected source subject to the work practice standards in § 63.803 of this subpart shall maintain onsite the work practice implementation plan and all records associated with fulfilling the requirements of that plan, including, but not limited to:

(1) Records demonstrating that the operator training program required by § 63.803(b) is in place;

(2) Records collected in accordance with the inspection and maintenance plan required by § 63.803(c);

(3) Records associated with the cleaning solvent accounting system required by § 63.803(d);

(4) Records associated with the limitation on the use of conventional air spray guns showing total finishing material usage and the percentage of finishing materials applied with conventional air spray guns for each semiannual period as required by § 63.803(h)(5).

(5) Records associated with the formulation assessment plan required by § 63.803(l); and

(6) Copies of documentation such as logs developed to demonstrate that the other provisions of the work practice implementation plan are followed.

(f) The owner or operator of an affected source following the compliance method of § 63.804 (f)(4) or (g)(4) shall maintain copies of the calculations demonstrating that the overall control efficiency (R) of the control system results in the value of E_{ac} required by Equations 2 or 4, records of the operating parameter values, and copies of the semiannual compliance reports required by § 63.807(d).

(g) The owner or operator of an affected source following the compliance method of § 63.804 (f)(6) or (g)(6), shall maintain copies of the calculations demonstrating that the overall control efficiency (R) of the control system results in the applicable value of G_{ac} calculated using Equation 3, records of the operating parameter values, and copies of the semiannual compliance reports required by § 63.807(d).

(h) The owner or operator of an affected source subject to the emission limits in § 63.802 and following the compliance provisions of § 63.804(f) (1), (2), (3), (5), (7) and (8) and § 63.804(g) (1), (2), (3), (5), (7), and (8) shall maintain records of the compliance certifications submitted in accordance with § 63.807(c) for each semiannual period following the compliance date.

(i) The owner or operator of an affected source shall maintain records of all other information submitted with the compliance status report required by § 63.9(h) and § 63.807(b) and the semiannual reports required by § 63.807(c).

(j) The owner or operator of an affected source shall maintain all records in accordance with the requirements of § 63.10(b)(1).

§ 63.807 Reporting requirements.

(a) The owner or operator of an affected source subject to this subpart shall fulfill all reporting requirements of § 63.7 through § 63.10 of subpart A (General Provisions) according to the applicability criteria in § 63.800(d) of this subpart.

(b) The owner or operator of an affected source demonstrating compliance in accordance with § 63.804(f) (1), (2), (3), (5), (7) and (8) shall submit the compliance status report required by § 63.9(h) of subpart A (General Provisions) no later than 60 days after the compliance date. The report shall include the information required by § 63.804(f) (1), (2), (3), (5), (7), and (8) of this subpart.

(c) The owner or operator of an affected source demonstrating compliance in accordance with § 63.804(g) (1), (2), (3), (5), (7), and (8) shall submit a report covering the previous 6 months of wood furniture manufacturing operations:

(1) The first report shall be submitted 30 calendar days after the end of the first 6-month period following the compliance date.

(2) Subsequent reports shall be submitted 30 calendar days after the end of each 6-month period following the first report.

(3) The semiannual reports shall include the information required by § 63.804(g) (1), (2), (3), (5), (7), and (8), a statement of whether the affected

source was in compliance or non-compliance, and, if the affected source was in noncompliance, the measures taken to bring the affected source into compliance.

(4) The frequency of the reports required by paragraph (c) of this section shall not be reduced from semiannually regardless of the history of the owner's or operator's compliance status.

(d) The owner or operator of an affected source demonstrating compliance in accordance with § 63.804(g) (4) and (6) of this subpart shall submit the excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e) of subpart A. The report shall include the monitored operating parameter values required by § 63.804(g) (4) and (6). If the source experiences excess emissions, the report shall be submitted quarterly for at least 1 year after the excess emissions occur and until a request to reduce reporting frequency is approved, as indicated in § 63.10(e)(3)(C). If no excess emissions occur, the report shall be submitted semiannually.

(e) The owner or operator of an affected source required to provide a written notification under § 63.803(1)(4) shall include in the notification one or more statements that explains the reasons for the usage increase. The notification shall be submitted no later than 30 calendar days after the end of the annual period in which the usage increase occurred.

§ 63.808 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under § 112(d) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) The authority conferred in § 63.804(f)(4)(iv) (D) and (E), § 63.804(g)(4)(iii)(C), § 63.804(g)(4)(vi), § 63.804(g)(6)(vi), § 63.805(a), § 63.805(d)(2)(V), and § 63.805(e)(1) shall not be delegated to any State.

§§ 63.809–63.819 [Reserved]

TABLES TO SUBPART JJ TO PART 63

TABLE 1.—GENERAL PROVISIONS APPLICABILITY TO SUBPART JJ

Reference	Applies to subpart JJ	Comment
63.1(a)	Yes	Subpart JJ specifies applicability.
63.1(b)(1)	No	
63.1(b)(2)	Yes	
63.1(b)(3)	Yes	
63.1(c)(1)	No	
63.1(c)(2)	No	Subpart JJ specifies applicability. Area sources are not subject to subpart JJ.
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(e)	Yes	
63.2	Yes	
63.3	Yes	Additional terms are defined in 63.801(a) of subpart JJ. When overlap between subparts A and JJ occurs, subpart JJ takes precedence. Other units used in subpart JJ are defined in 63.801(b).
63.4	Yes	
63.5	Yes	
63.6(a)	Yes	
63.6(b)(1)	Yes	
63.6(b)(2)	Yes	May apply when standards are proposed under Section 112(f) of the CAA.
63.6(b)(3)	Yes	
63.6(b)(4)	No	
63.6(b)(5)	Yes	
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	
63.6(c)(2)	No	
63.6(c)(5)	Yes	
63.6(e)(1)	Yes	
63.6(e)(2)	Yes	
63.6(e)(3)	Yes	Applies only to affected sources using a control device to comply with the rule. Affected sources complying through the procedures specified in 63.804 (a)(1), (a)(2), (b), (c)(1), (d)(1), (d)(2), (e)(1), and (e)(2) are subject to the emission standards at all times, including periods of startup, shutdown, and malfunction.
63.6(f)(1)	No	
63.6(f)(2)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h)	No.	

TABLE 1.—GENERAL PROVISIONS APPLICABILITY TO SUBPART JJ—Continued

Reference	Applies to sub-part JJ	Comment
63.6 (i)(1)–(i)(3)	Yes	
63.6(i)(4)(i)	Yes	
63.6(i)(4)(ii)	No.	
63.6 (i)(5)–(i)(14)	Yes	
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7	Yes	Applies only to affected sources using a control device to comply with the rule.
63.8	Yes	Applies only to affected sources using a control device to comply with the rule.
63.9(a)	Yes	
63.9(b)	Yes	Existing sources are required to submit initial notification report within 270 days of the effective date.
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.9(f)	No	
63.9(g)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.9(h)	Yes	63.9(h)(2)(ii) applies only to affected sources using a control device to comply with the rule.
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)(1)	Yes	
63.10(b)(2)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.10(b)(3)	Yes	
63.10(c)	Yes	
63.10(d)(1)	Yes	
63.10(d)(2)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.10(d)(3)	No	
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.10(e)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.10(f)	Yes	
63.11	No	
63.12–63.15	Yes	

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS

Chemical name	CAS No.
Acetaldehyde	75070
Acetamide	60355
Acetonitrile	75058
Acetophenone	98862
2-Acetylaminofluorine	53963
Acrolein	107028
Acrylamide	79061
Acrylic acid	79107
Acrylonitrile	107131
Allyl chloride	107051
4-Aminobiphenyl	92671
Aniline	62533
o-Anisidine	90040
Benzene	71432
Benzidine	92875
Benzotrachloride	98077
Benzyl chloride	100447
Biphenyl	92524
Bis(2-ethylhexyl) phthalate (DEHP)	117817
Bis(chloromethyl) ether	542881
Bromoform	75252
1,3-Butadiene	106990
Caprolactam	105602
Carbon disulfide	75150
Carbon tetrachloride	56235
Carbonyl sulfide	463581
Catechol	120809
Chloroacetic acid	79118
2-Chloroacetophenone	532274

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

Chemical name	CAS No.
Chlorobenzene	108907
Chloroform	67663
Chloromethyl methyl ether	107302
Chloroprene	126998
Cresols (isomers and mixture)	1319773
o-Cresol	95487
m-Cresol	108394
p-Cresol	106445
Cumene	98828
2,4-D (2,4-Dichlorophenoxyacetic acid, including salts and esters)	94757
DDE (1,1-Dichloro-2,2-bis (p-chlorophenyl) ethylene)	72559
Diazomethane	334883
Dibenzofuran	132649
1,2-Dibromo-3-chloropropane	96128
Dibutylphthalate	84742
1,4-Dichlorobenzene	106467
3,3'-Dichlorobenzidine	91941
Dichloroethyl ether (Bis (2-chloroethyl) ether)	111444
1,3-Dichloropropene	542756
Diethanolamine	111422
N,N-Dimethylaniline	121697
Diethyl sulfate	64675
3,3'-Dimethoxybenzidine	119904
4-Dimethylaminoazobenzene	60117
3,3'-Dimethylbenzidine	119937
Dimethylcarbamoyl chloride	79447

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TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

Chemical name	CAS No.
N,N-Dimethylformamide	68122
1,1-Dimethylhydrazine	57147
Dimethyl phthalate	131113
Dimethyl sulfate	77781
4,6-Dinitro-o-cresol, and salts .....	.....
2,4-Dinitrophenol	51285
2,4-Dinitrotoluene	121142
1,4-Dioxane (1,4-Diethyleneoxide)	123911
1,2-Diphenylhydrazine	122667
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
1,2-Epoxybutane	106887
Ethyl acrylate	140885
Ethylbenzene	100414
Ethyl carbamate (Urethane)	51796
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene dichloride (1,2-Dichloroethane)	107062
Ethylene glycol	107211
Ethylene oxide	75218
Ethylenethiourea	96457
Ethylidene dichloride (1,1-Dichloroethane)	75343
Formaldehyde	50000
Glycol ethers	0
Hexachlorobenzene	118741
Hexachloro-1,3-butadiene	87683
Hexachloroethane	67721
Hexamethylene-1,6-diisocyanate	822060
Hexamethylphosphoramide	680319
Hexane	110543
Hydrazine	302012
Hydroquinone	123319
Isophorone	78591
Maleic anhydride	108316
Methanol	67561
Methyl bromide (Bromomethane)	74839
Methyl chloride (Chloromethane)	74873
Methyl chloroform (1,1,1-Trichloroethane)	71556
Methyl ethyl ketone (2-Butanone)	78933
Methylhydrazine	60344
Methyl iodide (Iodomethane)	74884
Methyl isobutyl ketone (Hexone)	108101
Methyl isocyanate	624839
Methyl methacrylate	80626
Methyl tert-butyl ether	1634044
4,4'-Methylenebis (2-chloroaniline)	101144
Methylene chloride (Dichloromethane)	75092
4,4'-Methylenediphenyl diisocyanate (MDI)	101688
4,4'-Methylenedianiline	101779
Naphthalene	91203
Nitrobenzene	98953
4-Nitrobiphenyl	92933
4-Nitrophenol	100027
2-Nitropropane	79469

TABLE 2.—LIST OF VOLATILE HAZARDOUS AIR POLLUTANTS—Continued

Chemical name	CAS No.
N-Nitroso-N-methylurea	684935
N-Nitrosodimethylamine	62759
N-Nitrosomorpholine	59892
Phenol	108952
p-Phenylenediamine	106503
Phosgene	75445
Phthalic anhydride	85449
Polychlorinated biphenyls (Aroclors)	1336363
Polycyclic Organic Matter ^a	0
1,3-Propane sultone	1120714
beta-Propiolactone	57578
Propionaldehyde	123386
Propoxur (Baygon)	114261
Propylene dichloride (1,2-Dichloropropane)	78875
Propylene oxide	75569
1,2-Propylenimine (2-Methyl aziridine)	75558
Quinone	106514
Styrene	100425
Styrene oxide	96093
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016
1,1,2,2-Tetrachloroethane	79345
Tetrachloroethylene (Perchloroethylene)	127184
Toluene	108883
2,4-Toluenediamine	95807
Toluene-2,4-diisocyanate	584849
o-Toluidine	95534
1,2,4-Trichlorobenzene	120821
1,1,2-Trichloroethane	79005
Trichloroethylene	79016
2,4,5-Trichlorophenol	95954
2,4,6-Trichlorophenol	88062
Triethylamine	121448
Trifluralin	1582098
2,2,4-Trimethylpentane	540841
Vinyl acetate	108054
Vinyl bromide	593602
Vinyl chloride	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylenes (isomers and mixture)	1330207
o-Xylene	95476
m-Xylene	108383
p-Xylene	106423

^a Includes mono- and di-ethers of ethylene glycol, diethylene glycols and triethylene glycol; R-(OCH₂CH₂)_n-OR where: n = 1, 2, or 3.

R = alkyl or aryl groups
R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH₂CH₂)_n-OH. Polymers are excluded from the glycol category.

^b Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C.

TABLE 3.—SUMMARY OF EMISSION LIMITS

Emission point	Existing source	New source
Finishing Operations:		
(a) Achieve a weighted average VHAP content across all coatings (maximum kg VHAP/kg solids [lb VHAP/lb solids], as applied)	^a 1.0	^a 0.8
(b) Use compliant finishing materials (maximum kg VHAP/kg solids [lb VHAP/lb solids], as applied):		
—stains	^a 1.0	^a 1.0
—washcoats	^{a,b} 1.0	^{a,b} 0.8
—sealers	^a 1.0	^a 0.8
—topcoats	^a 1.0	^a 0.8
—basecoats	^{a,b} 1.0	^{a,b} 0.8
—enamels	^{a,b} 1.0	^{a,b} 0.8
—thinners (maximum percent VHAP allowable); or	10.0	10.0

TABLE 3.—SUMMARY OF EMISSION LIMITS—Continued

Emission point	Existing source	New source
(c) As an alternative, use control device; or	^c 1.0	^c 0.8
(d) Use any combination of (a), (b), and (c)	1.0	0.8
Cleaning Operations:		
Strippable spray booth material (maximum VOC content, kg VOC/kg solids [lb VOC/lb solids])	0.8	0.8
Contact Adhesives:		
(a) Use compliant contact adhesives (maximum kg VHAP/kg solids [lb VHAP/lb solids], as applied) based on following criteria:		
i. For aerosol adhesives, and for contact adhesives applied to nonporous substrates	^d NA	^d NA
ii. For foam adhesives used in products that meet flammability requirements	1.8	0.2
iii. For all other contact adhesives (including foam adhesives used in products that do not meet flammability requirements); or	1.0	0.2
(b) Use a control device	^e 1.0	^e 0.2

^aThe limits refer to the VHAP content of the coating, as applied.

^bWashcoats, basecoats, and enamels must comply with the limits presented in this table if they are purchased premade, that is, if they are not formulated onsite by thinning other finishing materials. If they are formulated onsite, they must be formulated using compliant finishing materials, i.e., those that meet the limits specified in this table, and thinners containing no more than 3.0 percent VHAP by weight.

^cThe control device must operate at an efficiency that is equivalent to no greater than 1.0 kilogram (or 0.8 kilogram) of VHAP being emitted from the affected emission source per kilogram of solids used.

^dThere is no limit on the VHAP content of these adhesives.

^eThe control device must operate at an efficiency that is equivalent to no greater than 1.0 kilogram (or 0.2 kilogram) of VHAP being emitted from the affected emission source per kilogram of solids used.

[60 FR 62936, Dec. 7, 1995, as amended at 62 FR 30260, June 3, 1997]

TABLE 4.—POLLUTANTS EXCLUDED FROM USE IN CLEANING AND WASHOFF SOLVENTS

Chemical name	CAS No.
4-Aminobiphenyl	92671
Styrene oxide	96093
Diethyl sulfate	64675
N-Nitrosomorpholine	59892
Dimethyl formamide	68122
Hexamethylphosphoramide	680319
Acetamide	60355
4,4'-Methylenedianiline	101779
o-Anisidine	90040
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016
Beryllium salts	
Benzidine	92875
N-Nitroso-N-methylurea	684935
Bis(chloromethyl)ether	542881
Dimethyl carbamoyl chloride	79447
Chromium compounds (hexavalent)	
1,2-Propylenimine (2-Methyl aziridine)	75558
Arsenic and inorganic arsenic compounds	9999904
Hydrazine	302012
1,1-Dimethyl hydrazine	57147
Beryllium compounds	7440417
1,2-Dibromo-3-chloropropane	96128
N-Nitrosodimethylamine	62759
Cadmium compounds	
Benzo (a) pyrene	50328
Polychlorinated biphenyls (Aroclors)	1336363
Heptachlor	76448
3,3'-Dimethyl benzidine	119937
Nickel subsulfide	12035722
Acrylamide	79061
Hexachlorobenzene	118741
Chlordane	57749
1,3-Propane sultone	1120714
1,3-Butadiene	106990
Nickel refinery dust	
2-Acetylaminofluorine	53963
3,3'-Dichlorobenzidine	53963
Lindane (hexachlorocyclohexane, gamma)	58899
2,4-Toluene diamine	95807
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444

TABLE 4.—POLLUTANTS EXCLUDED FROM USE IN CLEANING AND WASHOFF SOLVENTS—Continued

Chemical name	CAS No.
1,2-Diphenylhydrazine	122667
Toxaphene (chlorinated camphene)	8001352
2,4-Dinitrotoluene	121142
3,3'-Dimethoxybenzidine	119904
Formaldehyde	50000
4,4'-Methylene bis(2-chloroaniline)	101144
Acrylonitrile	107131
Ethylene dibromide(1,2-Dibromoethane)	106934
DDE (1,1-p-chlorophenyl 1-2 dichloroethylene)	72559
Chlorobenzilate	510156
Dichlorvos	62737
Vinyl chloride	75014
Coke Oven Emissions	9999908
Ethylene oxide	75218
Ethylene thiourea	96457
Vinyl bromide (bromoethene)	593602
Selenium sulfide (mono and di)	7488564
Chloroform	67663
Pentachlorophenol	87865
Ethyl carbamate (Urethane)	51796
Ethylene dichloride (1,2-Dichloroethane)	107062
Propylene dichloride (1,2-Dichloropropane)	78875
Carbon tetrachloride	56235
Benzene	71432
Methyl hydrazine	60344
Ethyl acrylate	140885
Propylene oxide	75569
Aniline	62533
1,4-Dichlorobenzene(p)	106467
2,4,6-Trichlorophenol	88062
Bis(2-ethylhexyl)phthalate (DEHP)	117817
o-Toluidine	95534
Propoxur	114261
Trichloroethylene	79016
1,4-Dioxane (1,4-Diethyleneoxide)	123911
Acetaldehyde	75070
Bromoform	75252
Captan	133062
Epichlorohydrin	106898

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TABLE 4.—POLLUTANTS EXCLUDED FROM USE IN CLEANING AND WASHOFF SOLVENTS—Continued

Chemical name	CAS No.
Methylene chloride (Dichloromethane)	75092
Tetrachloroethylene (Perchloroethylene)	127184
Dibenz (ah) anthracene	53703
Chrysene	218019
Dimethyl aminoazobenzene	60117
Benzo (a) anthracene	56553
Benzo (b) fluoranthene	205992
Antimony trioxide	1309644
2-Nitropropane	79469
1,3-Dichloropropene	542756
7, 12-Dimethylbenz(a)anthracene	57976
Benz(c)acridine	225514
Indeno(1,2,3-cd)pyrene	193395
1,2:7,8-Dibenzopyrene	189559

TABLE 5.—LIST OF VHAP OF POTENTIAL CONCERN IDENTIFIED BY INDUSTRY

Chemical	CAS No.	EPA de minimis, tons/yr
Dimethyl formamide	68122	1.0
Formaldehyde	50000	0.2
Methylene chloride	75092	4.0
2-Nitropropane	79469	1.0
Isophorone	78591	0.7
Styrene monomer	1000425	1.0
Phenol	108952	0.1
Diethanolamine	11422	5.0
2-Methoxyethanol	109864	10.0
2-Ethoxyethyl acetate	111159	5.0

TABLE 6.—VHAP OF POTENTIAL CONCERN

CAS No.	Chemical name
"Nonthreshold" Pollutants	
92671	4-Aminobiphenyl.
96093	Styrene oxide.
64675	Diethyl sulfate.
59892	N-Nitrosomorpholine.
68122	Dimethyl formamide.
80319	Hexamethylphosphoramide.
60355	Acetamide.
101779	4,4'-Methylenedianiline.
90040	o-Anisidine.
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxindioxin.
92875	Benzidine
684935	N-Nitroso-N-methylurea.
542881	Bis(chloromethyl)ether.
79447	Dimethyl carbamoyl chloride.
75558	1,2-Propylenimine (2-Methyl aziridine).
57147	1,1-Dimethyl hydrazine.
96128	1,2-Dibromo-3-chloropropane.
62759	N-Nitrosodimethylamine.
50328	Benzo (a) pyrene.
1336363	Polychlorinated biphenyls (Aroclors).
76448	Heptachlor.
119937	3,3'-Dimethyl benzidine.
79061	Acrylamide.
118741	Hexachlorobenzene.
57749	Chlordane.
1120714	1,3-Propane sultone.
106990	1,3-Butadiene.
53963	2-Acetylaminofluorene.
53963	3,3'-Dichlorobenzidine.

TABLE 6.—VHAP OF POTENTIAL CONCERN—Continued

CAS No.	Chemical name
58899	Lindane (hexachlorocyclohexane, gamma).
95807	2,4-Toluene diamine.
111444	Dichloroethyl ether (Bis(2-chloroethyl)ether).
122667	1,2 - Diphenylhydrazine.
8001352	Toxaphene (chlorinated camphene).
121142	2,4-Dinitrotoluene.
119904	3,3'-Dimethoxybenzidine.
50000	Formaldehyde.
101144	4,4'-Methylene bis(2-chloroaniline).
107131	Acrylonitrile.
106934	Ethylene dibromide(1,2-Dibromoethane).
72559	DDE (1,1-p-chlorophenyl 1-2 dichloroethylene).
510156	Chlorobenzilate.
62737	Dichlorvos.
75014	Vinyl chloride.
75218	Ethylene oxide.
96457	Ethylene thiourea.
593602	Vinyl bromide (bromoethene).
67663	Chloroform.
87865	Pentachlorophenol.
51796	Ethyl carbamate (Urethane).
107062	Ethylene dichloride (1,2-Dichloroethane).
78875	Propylene dichloride (1,2-Dichloropropane).
56235	Carbon tetrachloride.
71432	Benzene.
140885	Ethyl acrylate.
75569	Propylene oxide.
62533	Aniline.
106467	1,4-Dichlorobenzene(p).
88062	2,4,6-Trichlorophenol.
117817	Bis(2-ethylhexyl)phthalate (DEHP).
95534	o-Toluidine.
114261	Propoxur.
79016	Trichloroethylene.
123911	1,4-Dioxane (1,4-Diethyleneoxide).
75070	Acetaldehyde.
75252	Bromoform.
133062	Captan.
106898	Epichlorohydrin.
75092	Methylene chloride (Dichloromethane).
127184	Tetrachloroethylene (Perchloroethylene).
53703	Dibenz (ah) anthracene.
218019	Chrysene.
60117	Dimethyl aminoazobenzene.
56553	Benzo (a) anthracene.
205992	Benzo (b) fluoranthene.
79469	2-Nitropropane.
542756	1,3-Dichloropropene.
57976	7, 12-Dimethylbenz(a)anthracene.
225514	Benz(c)acridine.
193395	Indeno(1,2,3-cd)pyrene.
189559	1,2:7,8-Dibenzopyrene.
79345	1,1,2,2-Tetrachloroethane.
91225	Quinoline.
75354	Vinylidene chloride (1,1-Dichloroethylene).
87683	Hexachlorobutadiene.
82688	Pentachloronitrobenzene (Quintobenzene).
78591	Isophorone.
79005	1,1,2-Trichloroethane.
74873	Methyl chloride (Chloromethane).
67721	Hexachloroethane.
1582098	Trifluralin.
1319773	Cresols/Cresylic acid (isomers and mixture).
108394	m-Cresol.
75343	Ethylidene dichloride (1,1-Dichloroethane).
95487	o-Cresol.
106445	p-Cresol.
74884	Methyl iodide (Iodomethane).
100425	Styrene "a".
107051	Allyl chloride.

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TABLE 6.—VHAP OF POTENTIAL CONCERN—
Continued

CAS No.	Chemical name
334883	Diazomethane.
95954	2,4,5 - Trichlorophenol.
133904	Chloramben.
106887	1,2 - Epoxybutane.
108054	Vinyl acetate.
126998	Chloroprene.
123319	Hydroquinone.
92933	4-Nitrobiphenyl
"High-Concern" Pollutants	
56382	Parathion.
13463393	Nickel Carbonyl.
60344	Methyl hydrazine.
75218	Ethylene oxide.
151564	Ethylene imine.
77781	Dimethyl sulfate.
107302	Chloromethyl methyl ether.
57578	beta-Propiolactone.
100447	Benzyl chloride.
98077	Benzotrichloride.
107028	Acrolein.
584849	2,4 - Toluene diisocyanate.
75741	Tetramethyl lead.
78002	Tetraethyl lead.
12108133	Methylcyclopentadienyl manganese.
624839	Methyl isocyanate.
77474	Hexachlorocyclopentadiene.
62207765	Fluomine.
10210681	Cobalt carbonyl.
79118	Chloroacetic acid.
534521	4,6-Dinitro-o-cresol, and salts.
101688	Methylene diphenyl diisocyanate.
108952	Phenol.
62384	Mercury, (acetato-o) phenyl.
98862	Acetophenone.
108316	Maleic anhydride.
532274	2-Chloroacetophenone.
51285	2,4-Dinitrophenol.
108864	2-Methoxy ethanol.
98953	Nitrobenzene.
74839	Methyl bromide (Bromomethane).
75150	Carbon disulfide.
121697	N,N-Dimethylaniline.
"Unrankable" Pollutants	
106514	Quinone.
123386	Propionaldehyde.
120809	Catechol.
85449	Phthalic anhydride.
463581	Carbonyl sulfide.
132649	Dibenzofurans.
100027	4-Nitrophenol.
540841	2,2,4-Trimethylpentane.
11422	Diethanolamine.
822060	Hexamethylene-1,6-diisocyanate
	Glycol ethers ^b
	Polycyclic organic matter ^c

* = Currently an EPA weight of evidence classification is under review.

^a The EPA does not currently have an official weight-of-evidence classification for styrene. For purposes of this rule, styrene is treated as a "nonthreshold" pollutant. (See data report form in appendix A of the hazard ranking technical background document.)

^b Except for 2-ethoxy ethanol, ethylene glycol monobutyl ether, and 2-methoxy ethanol.

^c Except for benzo(b)fluoranthene, benzo(a)anthracene, benzo(a)pyrene, 7,12-dimethylbenz(a)anthracene, benz(c)acridine, chrysene, dibenz(ah)anthracene, 1,2:7,8-dibenzopyrene, indeno(1,2,3-cd)pyrene, but including dioxins and furans.

Subpart KK—National Emission Standards for the Printing and Publishing Industry

SOURCE: 61 FR 27140, May 30, 1996, unless otherwise.

§ 63.820 Applicability.

(a) The provisions of this subpart apply to:

(1) Each new and existing facility that is a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.2, at which publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses are operated, and

(2) each new and existing facility at which publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses are operated for which the owner or operator chooses to commit to, and meets the criteria of paragraphs (a)(2)(i) and (a)(2)(ii) of this section for purposes of establishing the facility to be an area source with respect to this subpart:

(i) Use less than 9.1 Mg (10 tons) per each rolling 12-month period of each HAP at the facility, including materials used for source categories or purposes other than printing and publishing, and

(ii) Use less than 22.7 Mg (25 tons) per each rolling 12-month period of any combination of HAP at the facility, including materials used for source categories or purposes other than printing and publishing.

(3) Each facility for which the owner or operator chooses to commit to and meets the criteria stated in paragraph (a)(2) of this section shall be considered an area source, and is subject only to the provisions of § 63.829(d) and § 63.830(b)(1) of this subpart.

(4) Each facility for which the owner or operator commits to the conditions in paragraph (a)(2) of this section may exclude material used in routine janitorial or facility grounds maintenance, personal uses by employees or other persons, the use of products for the purpose of maintaining electric, propane, gasoline and diesel powered motor vehicles operated by the facility, and the use of HAP contained in intake water (used for processing or noncontact cooling) or intake air (used

either as compressed air or for combustion).

(5) Each facility for which the owner or operator commits to the conditions in paragraph (a)(2) of this section to become an area source, but subsequently exceeds either of the thresholds in paragraph (a)(2) of this section for any rolling 12-month period (without first obtaining and complying with other limits that keep its potential to emit HAP below major source levels), shall be considered in violation of its commitment for that 12-month period and shall be considered a major source of HAP beginning the first month after the end of the 12-month period in which either of the HAP-use thresholds was exceeded. As a major source of HAP, each such facility would be subject to the provisions of this subpart as noted in paragraph (a)(1) of this section and would no longer be eligible to use the provisions of paragraph (a)(2) of this section, even if in subsequent 12-month periods the facility uses less HAP than the thresholds in paragraph (a)(2) of this section.

(6) An owner or operator of an affected source subject to paragraph (a)(2) of this section who chooses to no longer be subject to paragraph (a)(2) of this section shall notify the Administrator of such change. If, by no longer being subject to paragraph (a)(2) of this section, the facility at which the affected source is located becomes a major source:

(i) The owner or operator of an existing source must continue to comply with the HAP usage provisions of paragraph (a)(2) of this section until the source is in compliance with all relevant requirements for existing affected sources under this subpart;

(ii) The owner or operator of a new source must continue to comply with the HAP usage provisions of paragraph (a)(2) of this section until the source is in compliance with all relevant requirements for new affected sources under this subpart.

(7) Nothing in this paragraph is intended to preclude a facility from establishing area source status by limiting its potential to emit through other appropriate mechanisms that may be available through the permitting authority.

(b) This subpart does not apply to research or laboratory equipment.

§ 63.821 Designation of affected sources.

(a) The affected sources subject to this subpart are:

(1) All of the publication rotogravure presses and all affiliated equipment, including proof presses, cylinder and parts cleaners, ink and solvent mixing and storage equipment, and solvent recovery equipment at a facility.

(2) All of the product and packaging rotogravure or wide-web flexographic printing presses at a facility plus any other equipment at that facility which the owner or operator chooses to include in accordance with paragraph (a)(3) of this section, except

(i) Proof presses, and

(ii) Any product and packaging rotogravure or wide-web flexographic press which is used primarily for coating, laminating, or other operations which the owner or operator chooses to exclude, provided that

(A) The sum of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials applied by the press using product and packaging rotogravure work stations and the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials applied by the press using wide-web flexographic print stations in each month never exceeds five weight-percent of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials applied by the press in that month, including all inboard and outboard stations, and

(B) The owner or operator maintains records as required in § 63.829(f).

(3) The owner or operator of an affected source, as defined in paragraph (a)(2) of this section, may elect to include in that affected source stand-alone coating equipment subject to the following provisions:

(i) Stand-alone coating equipment meeting any of the criteria specified in this subparagraph is eligible for inclusion:

(A) The stand-alone coating equipment and one or more product and packaging rotogravure or wide-web

flexographic presses are used to apply solids-containing materials to the same web or substrate, or

(B) The stand-alone coating equipment and one or more product and packaging rotogravure or wide-web flexographic presses apply a common solids-containing material, or

(C) A common control device is used to control organic HAP emissions from the stand-alone coating equipment and from one or more product and packaging rotogravure or wide-web flexographic printing presses;

(ii) All eligible stand-alone coating equipment located at the facility is included in the affected source; and

(iii) No product and packaging rotogravure or wide-web flexographic presses are excluded from the affected source under the provisions of paragraph (a)(2)(ii) of this section.

(b) Each product and packaging rotogravure or wide-web flexographic printing affected source at a facility that is a major source of HAP, as defined in 40 CFR 63.2, that complies with the criteria of paragraphs (b)(1) or (b)(2) on and after the applicable compliance date as specified in § 63.826 of this subpart is subject only to the requirements of § 63.829(e) and § 63.830(b)(1) of this subpart.

(1) The owner or operator of the source applies no more than 500 kg per month, for every month, of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, and other materials on product and packaging rotogravure or wide-web flexographic printing presses, or

(2) The owner or operator of the source applies no more than 400 kg per month, for every month, of organic HAP on product and packaging rotogravure or wide-web flexographic printing presses.

(c) Each product and packaging rotogravure or wide-web flexographic printing affected source at a facility that is a major source of HAP, as defined in 40 CFR 63.2, that complies with neither the criterion of paragraph (b)(1) nor (b)(2) of this section in any month after the applicable compliance date as specified in § 63.826 of this subpart is, starting with that month, subject to all relevant requirements of this subpart and is no longer eligible to use the provi-

sions of paragraph (b) of this section, even if in subsequent months the affected source does comply with the criteria of paragraphs (b)(1) or (b)(2) of this section.

§ 63.822 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the CAA and in subpart A of this part.

Always-controlled work station means a work station associated with a dryer from which the exhaust is delivered to a control device, with no provision for the dryer exhaust to bypass the control device. Sampling lines for analyzers and relief valves needed for safety purposes are not considered bypass lines.

Capture efficiency means the fraction of all organic HAP emissions generated by a process that are delivered to a control device, expressed as a percentage.

Capture system means a hood, enclosed room, or other means of collecting organic HAP emissions into a closed-vent system that exhausts to a control device.

Car-seal means a seal that is placed on a device that is used to change the position of a valve or damper (e.g., from open to closed) in such a way that the position of the valve or damper cannot be changed without breaking the seal.

Certified product data sheet (CPDS) means documentation furnished by suppliers of inks, coatings, varnishes, adhesives, primers, solvents, and other materials or by an outside laboratory that provides the organic HAP content of these materials, by weight, measured using Method 311 of appendix A of this part 63 or an equivalent or alternative method (or formulation data as provided in § 63.827(b)) and the solids content of these materials, by weight, determined in accordance with § 63.827(c). The purpose of the CPDS is to assist the owner or operator in demonstrating compliance with the emission limitations presented in §§ 63.824–63.825.

Coating operation means the application of a uniform layer of material across the entire width of a substrate.

Coating station means a work station on which a coating operation is conducted.

Control device means a device such as a carbon adsorber or oxidizer which reduces the organic HAP in an exhaust gas by recovery or by destruction.

Control device efficiency means the ratio of organic HAP emissions recovered or destroyed by a control device to the total HAP emissions that are introduced into the control device, expressed as a percentage.

Day means a 24-consecutive-hour period.

Facility means all contiguous or adjoining property that is under common ownership or control, including properties that are separated only by a road or other public right-of-way.

Flexographic press means an unwind or feed section, a series of individual work stations, one or more of which is a flexographic print station, any dryers (including interstage dryers and overhead tunnel dryers) associated with the work stations, and a rewind, stack, or collection station. The work stations may be oriented vertically, horizontally, or around the circumference of a single large impression cylinder. Inboard and outboard work stations, including those employing any other technology, such as rotogravure, are included if they are capable of printing or coating on the same substrate.

Flexographic print station means a work station on which a flexographic printing operation is conducted. A flexographic print station includes a flexographic printing plate which is an image carrier made of rubber or other elastomeric material. The image (type and art) to be printed is raised above the printing plate.

HAP applied means the organic HAP content of all inks, coatings, varnishes, adhesives, primers, solvent, and other materials applied to a substrate by a product and packaging rotogravure or wide-web flexographic printing affected source.

HAP used means the organic HAP applied by a publication rotogravure printing affected source, including all organic HAP used for cleaning, parts washing, proof presses, and all organic HAP emitted during tank loading, ink mixing, and storage.

Intermittently-controllable work station means a work station associated with a dryer with provisions for the dryer exhaust to be delivered to or diverted from a control device depending on the position of a valve or damper. Sampling lines for analyzers and relief valves needed for safety purposes are not considered bypass lines.

Month means a calendar month or a prespecified period of 28 days to 35 days.

Never-controlled work station means a work station which is not equipped with provisions by which any emissions, including those in the exhaust from any associated dryer, may be delivered to a control device.

Overall Organic HAP control efficiency means the total efficiency of a control system, determined either by:

(1) The product of the capture efficiency and the control device efficiency or

(2) A liquid-liquid material balance.

Print station means a work station on which a printing operation is conducted.

Printing operation means the formation of words, designs, and pictures on a substrate other than fabric through the application of material to that substrate.

Product and packaging rotogravure printing means the production, on a rotogravure press, of any printed substrate not otherwise defined as publication rotogravure printing. This includes, but is not limited to, folding cartons, flexible packaging, labels and wrappers, gift wraps, wall and floor coverings, upholstery, decorative laminates, and tissue products.

Proof press means any device used only to check the quality of the image formation of rotogravure cylinders or flexographic plates, which prints only non-saleable items.

Publication rotogravure printing means the production, on a rotogravure press, of the following saleable paper products:

(1) Catalogues, including mail order and premium,

(2) Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

(3) Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point of purchase and other printed display material,

(4) Magazines,

(5) Miscellaneous advertisements, including brochures, pamphlets, catalog sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

(6) Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacular rolls and sections,

(7) Periodicals, and

(8) Telephone and other directories, including business reference services.

Research or laboratory equipment means any equipment for which the primary purpose is to conduct research and development into new processes and products, where such equipment is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

Rotogravure press means an unwind or feed section, a series of one or more work stations, one or more of which is a rotogravure print station, any dryers associated with the work stations, and a rewind, stack, or collection section. Inboard and outboard work stations including those employing any other technology, such as flexography, are included if they are capable of printing or coating on the same substrate.

Rotogravure print station means a work station on which a rotogravure printing operation is conducted. A rotogravure print station includes a rotogravure cylinder and ink supply. The image (type and art) to be printed is etched or engraved below the surface of the rotogravure cylinder. On a rotogravure cylinder the printing image consists of millions of minute cells.

Stand-alone coating equipment means an unwind or feed section, a series of one or more coating stations and any associated dryers, and a rewind, stack or collection section that:

Is not part of a product and packaging rotogravure or wide-web flexographic press, and

Is used to conduct one or more coating operations on a substrate. Stand-alone coating equipment

May or may not process substrate that is also processed by a product and packaging rotogravure or wide-web flexographic press, apply solids-containing materials that are also applied by a product and packaging rotogravure or wide-web flexographic press, and utilize a control device that is also utilized by a product and packaging rotogravure or wide-web flexographic press. Stand-alone coating equipment is sometimes referred to as "off-line" coating equipment.

Wide-web flexographic press means a flexographic press capable of printing substrates greater than 18 inches in width.

Work station means a unit on a rotogravure or wide-web flexographic press where material is deposited onto a substrate.

(b) The symbols used in equations in this subpart are defined as follows:

(1) C_{ahi} =the monthly average, as-applied, organic HAP content of solids-containing material, i , expressed as a weight-fraction, kg/kg.

(2) C_{asi} =the monthly average, as applied, solids content, of solids-containing material, i , expressed as a weight-fraction, kg/kg.

(3) C_{hi} =the organic HAP content of ink or other solids-containing material, i , expressed as a weight-fraction, kg/kg.

(4) C_{hij} =the organic HAP content of solvent j , added to solids-containing material i , expressed as a weight-fraction, kg/kg.

(5) C_{hj} =the organic HAP content of solvent j , expressed as a weight-fraction, kg/kg.

(6) C_i =the organic volatile matter concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 25 or Method 25A.

(7) C_{si} =the solids content of ink or other material, i , expressed as a weight-fraction, kg/kg.

(8) C_{vi} =the volatile matter content of ink or other material, i , expressed as a weight-fraction, kg/kg.

(9) E =the organic volatile matter control efficiency of the control device, percent.

(10) F =the organic volatile matter capture efficiency of the capture system, percent.

(11) G_i =the mass fraction of each solids containing material, i , which was applied at 20 weight-percent or greater solids content, on an as-applied basis, kg/kg.

(12) H =the total monthly organic HAP applied, kg.

(13) H_a =the monthly allowable organic HAP emissions, kg.

(14) H_L =the monthly average, as-applied, organic HAP content of all solids-containing materials applied at less than 0.04 kg organic HAP per kg of material applied, kg/kg.

(15) H_s =the monthly average, as-applied, organic HAP to solids ratio, kg organic HAP/kg solids applied.

(16) H_{si} =the as-applied, organic HAP to solids ratio of material i .

(17) L =the mass organic HAP emission rate per mass of solids applied, kg/kg.

(18) M_{Bi} =the sum of the mass of solids-containing material, i , applied on intermittently-controllable work stations operating in bypass mode and the mass of solids-containing material, i , applied on never-controlled work stations, in a month, kg.

(19) M_{Bj} =the sum of the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , applied on intermittently-controllable work stations operating in bypass mode and the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , applied on never-controlled work stations, in a month, kg.

(20) M_{ci} =the sum of the mass of solids-containing material, i , applied on intermittently-controllable work stations operating in controlled mode and the mass of solids-containing material, i , applied on always-controlled work stations, in a month, kg.

(21) M_{cj} =the sum of the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , applied on intermittently-controllable work stations operating in controlled mode and the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , applied on always-controlled work stations in a month, kg.

(22) M_t =the total organic volatile matter mass flow rate, kg/h.

(23) M_{ti} =the organic volatile matter mass flow rate at the inlet to the control device, kg/h.

(24) M_{to} =the organic volatile matter mass flow rate at the outlet of the control device, kg/h.

(25) M_{hu} =the mass of organic HAP used in a month, kg.

(26) M_i =the mass of ink or other material, i , applied in a month, kg.

(27) M_{ij} =the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , added to solids-containing material, i , in a month, kg.

(28) M_j =the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , applied in a month, kg.

(29) M_{Lj} =the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j , added to solids-containing materials which were applied at less than 20 weight-percent solids content, on an as-applied basis, in a month, kg.

(30) M_{vr} =the mass of volatile matter recovered in a month, kg.

(31) M_{vu} =the mass of volatile matter, including water, used in a month, kg.

(32) MW_i =the molecular weight of compound i in the vent gas, kg/kg-mol.

(33) n =the number of organic compounds in the vent gas.

(34) p =the number of different inks, coatings, varnishes, adhesives, primers, and other materials applied in a month.

(35) q =the number of different solvents, thinners, reducers, diluents, or other non-solids-containing materials applied in a month.

(36) Q_{sd} =the volumetric flow rate of gases entering or exiting the control device, as determined by Method 2, dscm/h.

(37) R =the overall organic HAP control efficiency, percent.

(38) R_e =the overall effective organic HAP control efficiency for publication rotogravure, percent.

(39) R_c =the organic volatile matter collection and recovery efficiency, percent.

(40) S =the mass organic HAP emission rate per mass of material applied, kg/kg.

(41) 0.0416=conversion factor for molar volume, kg-mol/m³(@ 293 K and 760 mmHg).

§ 63.823 Standards: General.

Table 1 to this subpart provides cross references to the 40 CFR part 63, subpart A, general provisions, indicating the applicability of the general provisions requirements to this subpart KK.

§ 63.824 Standards: Publication rotogravure printing.

(a) Each owner or operator of any publication rotogravure printing affected source that is subject to the requirements of this subpart shall comply with these requirements on and after the compliance dates as specified in § 63.826 of this subpart.

(b) Each publication rotogravure affected source shall limit emissions of organic HAP to no more than eight percent of the total volatile matter used each month. The emission limitation may be achieved by overall control of at least 92 percent of organic HAP used, by substitution of non-HAP materials for organic HAP, or by a combination of capture and control technologies and substitution of materials. To demonstrate compliance, each owner or operator shall follow the procedure in paragraph (b)(1) of this section when emissions from the affected source are controlled by a solvent recovery device, the procedure in paragraph (b)(2) of this section when emissions from the affected source are controlled by an oxidizer, and the procedure in paragraph (b)(3) of this section when no control device is used.

(1) Each owner or operator using a solvent recovery device to control emissions shall demonstrate compliance by showing that the HAP emission limitation is achieved by following the procedures in either paragraph (b)(1)(i) or (b)(1)(ii) of this section:

(i) Perform a liquid-liquid material balance for each month as follows:

(A) Measure the mass of each ink, coating, varnish adhesive, primer, solvent, and other material used by the affected source during the month.

(B) Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent and other material used by the affected source during the month following the procedure in § 63.827(b)(1).

(C) Determine the volatile matter content, including water, of each ink, coating, varnish, adhesive, primer, solvent, and other material used by the affected source during the month following the procedure in § 63.827(c)(1).

(D) Install, calibrate, maintain and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be initially certified by the manufacturer to be accurate to within ± 2.0 percent.

(E) Measure the amount of volatile matter recovered for the month.

(F) Calculate the overall effective organic HAP control efficiency (R_e) for the month using Equation 1:

$$R_e = (100) \frac{M_{vu} - M_{hu} + \left[(M_{vr}) (M_{hu} / M_{vu}) \right]}{M_{vu}} \quad \text{Eq 1}$$

For the purposes of this calculation, the mass fraction of organic HAP present in the recovered volatile matter is assumed to be equal to the mass fraction of organic HAP present in the volatile matter used.

(G) The affected source is in compliance for the month, if R_e is at least 92 percent each month.

(ii) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency as specified in paragraphs (b)(1)(ii)(A) through (b)(1)(ii)(E) of this section:

(A) Install continuous emission monitors to determine the total organic

volatile matter mass flow rate (e.g., by determining the concentration of the vent gas in grams per cubic meter, and the volumetric flow rate in cubic meters per second, such that the total organic volatile matter mass flow rate in grams per second can be calculated and summed) at both the inlet to and the outlet from the control device, such that the percent control efficiency (E)

of the control device can be calculated for each month.

(B) Determine the percent capture efficiency (F) of the capture system according to § 63.827(e).

(C) Calculate the overall effective organic HAP control efficiency (R_e) achieved for each month using Equation 2.

$$R_e = (100) \frac{M_{vu} - M_{hu} + [(E/100)(F/100)M_{hu}]}{M_{vu}} \quad \text{Eq 2}$$

(D) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with § 63.828(a)(5) whenever a publication rotogravure printing press is operated.

(E) The affected source is in compliance with the requirement for the month if R_e is at least 92 percent, and the capture device is operated at an average value greater than, or less than (as appropriate) the operating parameter value established in accordance with § 63.828(a)(5) for each three-hour period.

(2) Each owner or operator using an oxidizer to control emissions shall demonstrate compliance by showing that the HAP emission limitation is achieved by following the procedure in either paragraph (b)(2)(i) or (b)(2)(ii) of this section:

(i) Demonstrate initial compliance through performance tests and continuing compliance through continuous monitoring as follows:

(A) Determine the oxidizer destruction efficiency (E) using the procedure in § 63.827(d).

(B) Determine the capture efficiency (F) using the procedure in § 63.827(e).

(C) [Reserved]

(D) Calculate the overall effective organic HAP control efficiency (R_e) achieved using Equation 2.

(E) The affected source is in initial compliance if R_e is at least 92 percent. Demonstration of continuing compliance is achieved by continuous monitoring of an appropriate oxidizer oper-

ating parameter in accordance with § 63.828(a)(4), and by continuous monitoring of an appropriate capture system monitoring parameter in accordance with § 63.828(a)(5). The affected source is in continuing compliance if the capture device is operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with § 63.828(a)(5), and

(1) if an oxidizer other than a catalytic oxidizer is used, the average combustion temperature for all three-hour periods is greater than or equal to the average combustion temperature established under § 63.827(d), or

(2) if a catalytic oxidizer is used, the average catalyst bed inlet temperature for all three-hour periods is greater than or equal to the average catalyst bed inlet temperature established in accordance with § 63.827(d).

(ii) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency in accordance with the requirements of paragraph (b)(1)(ii) of this section.

(3) To demonstrate compliance without the use of a control device, each owner or operator shall compare the mass of organic HAP used to the mass of volatile matter used each month, as specified in paragraphs (b)(3)(i) through (b)(3)(iv) of this section:

(i) Measure the mass of each ink, coating, varnish adhesive, primer, solvent, and other material used in the affected source during the month,

(ii) Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material used during the month following the procedure in § 63.827(b)(1), and

(iii) Determine the volatile matter content, including water, of each ink, coating, varnish, adhesive, primer, solvent, and other material used during the month following the procedure in § 63.827(c)(1).

(iv) The affected source is in compliance for the month if the mass of organic HAP used does not exceed eight percent of the mass of volatile matter used.

§ 63.825 Standards: Product and packaging rotogravure and wide-web flexographic printing.

(a) Each owner or operator of any product and packaging rotogravure or wide-web flexographic printing affected source that is subject to the requirements of this subpart shall comply with these requirements on and after the compliance dates as specified in § 63.826 of this subpart.

(b) Each product and packaging rotogravure or wide-web flexographic printing affected source shall limit emissions to no more than five percent of the organic HAP applied for the month; or to no more than four percent of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month; or to no more than 20 percent of the mass of solids applied for the month; or to a calculated equivalent allowable mass based on the organic HAP and solids contents of the inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month. The owner or operator of each product and packaging rotogravure or wide-web flexographic printing affected source shall demonstrate compliance with this standard by following one of the procedures in paragraphs (b)(1) through (b)(10) of this section:

(1) Demonstrate that each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner, and other material applied during the month contains no more than 0.04 weight-fraction organic HAP, on an as-purchased basis,

as determined in accordance with § 63.827(b)(2).

(2) Demonstrate that each ink, coating, varnish, adhesive, primer, and other solids-containing material applied during the month contains no more than 0.04 weight-fraction organic HAP, on a monthly average as-applied basis as determined in accordance with paragraphs (b)(2)(i)–(ii) of this section. The owner or operator shall calculate the as-applied HAP content of materials which are reduced, thinned, or diluted prior to application, as follows:

(i) Determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, diluent, reducer, thinner, and other material applied on an as-purchased basis in accordance with § 63.827(b)(2).

(ii) Calculate the monthly average as-applied organic HAP content, C_{ahi} of each ink, coating, varnish, adhesive, primer, and other solids-containing material using Equation 3.

$$C_{ahi} = \frac{\left(C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} \right)}{M_i + \sum_{j=1}^q M_{ij}} \quad \text{Eq 3}$$

(3)(i) Demonstrate that each ink, coating, varnish, adhesive, primer, and other solids-containing material applied, either

(A) Contains no more than 0.04 weight-fraction organic HAP on a monthly average as-applied basis, or

(B) Contains no more than 0.20 kg of organic HAP per kg of solids applied, on a monthly average as-applied basis.

(ii) The owner or operator may demonstrate compliance in accordance with paragraphs (b)(3)(ii) (A)–(C) of this section.

(A) Use the procedures of paragraph (b)(2) of this section to determine which materials meet the requirements of paragraph (b)(3)(i)(A) of this section,

(B) Determine the as-applied solids content following the procedure in § 63.827(c)(2) of all materials which do not meet the requirements of paragraph (b)(3)(i)(A) of this section. The owner or operator may calculate the

monthly average as-applied solids content of materials which are reduced, thinned, or diluted prior to application, using Equation 4, and

$$C_{asi} = \frac{C_{si} M_i}{M_i + \sum_{j=1}^q M_{ij}} \quad \text{Eq 4}$$

(C) Calculate the as-applied organic HAP to solids ratio, H_{si} , for all materials which do not meet the requirements of paragraph (b)(3)(i)(A) of this section, using Equation 5.

$$H_{si} = \frac{C_{ahi}}{C_{asi}} \quad \text{Eq 5}$$

(4) Demonstrate that the monthly average as-applied organic HAP content, H_L , of all materials applied is less than 0.04 kg HAP per kg of material applied, as determined by Equation 6.

$$H_L = \frac{\sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_j} \quad \text{Eq 6}$$

(5) Demonstrate that the monthly average as-applied organic HAP content on the basis of solids applied, H_s , is less than 0.20 kg HAP per kg solids applied as determined by Equation 7.

$$H_s = \frac{\sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}}{\sum_{i=1}^p M_i C_{si}} \quad \text{Eq 7}$$

(6) Demonstrate that the total monthly organic HAP applied, H , as determined by Equation 8, is less than the calculated equivalent allowable organic HAP, H_a , as determined by paragraph (e) of this section.

$$H = \sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj} \quad \text{Eq 8}$$

(7) Operate a capture system and control device and demonstrate an overall organic HAP control efficiency of at

least 95 percent for each month. If the affected source operates more than one capture system or more than one control device, and has only always-controlled work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of either paragraph (f) or (h) of this section. If the affected source operates one or more never-controlled work stations or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section. Otherwise, the owner or operator shall demonstrate compliance in accordance with the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(8) Operate a capture system and control device and limit the organic HAP emission rate to no more than 0.20 kg organic HAP emitted per kg solids applied as determined on a monthly average as-applied basis. If the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section. Otherwise, the owner or operator shall demonstrate compliance following the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(9) Operate a capture system and control device and limit the organic HAP emission rate to no more than 0.04 kg organic HAP emitted per kg material applied as determined on a monthly average as-applied basis. If the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section.

Otherwise, the owner or operator shall demonstrate compliance following the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(10) Operate a capture system and control device and limit the monthly organic HAP emissions to less than the allowable emissions as calculated in accordance with paragraph (e) of this section. If the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations, then the owner or operator shall demonstrate compliance in accordance with the provisions of paragraph (f) of this section. Otherwise, the owner or operator shall demonstrate compliance following the procedure in paragraph (c) of this section when emissions from the affected source are controlled by a solvent recovery device or the procedure in paragraph (d) of this section when emissions are controlled by an oxidizer.

(c) To demonstrate compliance with the overall organic HAP control efficiency requirement in § 63.825(b)(7) or the organic HAP emissions limitation requirements in § 63.825(b)(8)–(10), each owner or operator using a solvent recovery device to control emissions shall show compliance by following the procedures in either paragraph (c)(1) or (c)(2) of this section:

(1) Perform a liquid-liquid material balance for each and every month as follows:

(i) Measure the mass of each ink, coating, varnish, adhesive, primer, solvent and other material applied on the press or group of presses controlled by a common solvent recovery device during the month.

(ii) If demonstrating compliance on the basis of organic HAP emission rate

based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(b)(2).

(iii) Determine the volatile matter content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(c)(2).

(iv) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, determine the solids content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(c)(2).

(v) Install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile matter recovered by the solvent recovery device on a monthly basis. The device shall be initially certified by the manufacturer to be accurate to within ± 2.0 percent.

(vi) Measure the amount of volatile matter recovered for the month.

(vii) Calculate the volatile matter collection and recovery efficiency, R_v , using Equation 9.

$$R_v = 100 \frac{M_{vr}}{\sum_{i=1}^p M_i C_{vi} + \sum_{j=1}^q M_j} \quad \text{Eq 9}$$

(viii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, calculate the organic HAP emitted during the month, H , using Equation 10.

$$H = \left[1 - \frac{R_v}{100} \right] \left[\sum_{i=1}^p \left(C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} \right) \right] \quad \text{Eq 10}$$

(ix) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, calculate the organic HAP emission rate based on solids applied, L, using Equation 11.

$$L = \frac{H}{\sum_{i=1}^p C_{si} M_i} \quad \text{Eq 11}$$

(x) If demonstrating compliance on the basis of organic HAP emission rate based on materials applied, calculate the organic HAP emission rate based on material applied, S, using Equation 12.

$$S = \frac{H}{\sum_{i=1}^p \left[M_i + \sum_{j=1}^q M_{ij} \right]} \quad \text{Eq 12}$$

(xi) The affected source is in compliance if

(A) The organic volatile matter collection and recovery efficiency, R_v , is 95 percent or greater, or

(B) The organic HAP emission rate based on solids applied, L, is 0.20 kg organic HAP per kg solids applied or less, or

(C) the organic HAP emission rate based on material applied, S, is 0.04 kg organic HAP per kg material applied or less, or

(D) the organic HAP emitted during the month, H, is less than the calculated allowable organic HAP, H_a , as determined using paragraph (e) of this section.

(2) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency following the procedures in paragraphs (c)(2)(i) through (c)(2)(xi) of this section:

(i) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on materials applied, or emission of less than the calculated allowable organic HAP, measure the mass of each ink, coating, varnish, adhesive, primer, solvent, and other material applied on the press or

group of presses controlled by a common control device during the month.

(ii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(b)(2).

(iii) Install continuous emission monitors to determine the total organic volatile matter mass flow rate (e.g., by determining the concentration of the vent gas in grams per cubic meter, and the volumetric flow rate in cubic meters per second, such that the total organic volatile matter mass flow rate in grams per second can be calculated and summed) at both the inlet to and the outlet from the control device, such that the percent control efficiency (E) of the control device can be calculated for each month.

(iv) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, determine the solids content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(c)(2).

(v) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameter established in accordance with § 63.828(a)(5) whenever a product and packaging rotogravure or wide-web flexographic printing press is operated.

(vi) Determine the capture efficiency (F) in accordance with § 63.827(e)-(f).

(vii) Calculate the overall organic HAP control efficiency, (R), achieved for each month using Equation 13.

$$R = \frac{EF}{100} \quad \text{Eq 13}$$

(viii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP

emission rate based on material applied or emission of less than the calculated allowable organic HAP, cal-

culate the organic HAP emitted during the month, H, for each month using Equation 14.

$$H = \left[1 - \left(\frac{E}{100} \frac{F}{100} \right) \right] \left[\sum_{i=1}^p C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} \right] \quad \text{Eq 14}$$

(ix) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, calculate the organic HAP emission rate based on solids applied, L, using Equation 15.

$$L = \frac{H}{\sum_{i=1}^p C_{si} M_i} \quad \text{Eq 15}$$

(x) If demonstrating compliance on the basis of organic HAP emission rate based on materials applied, calculate the organic HAP emission rate based on material applied, S, using Equation 16.

$$S = \frac{H}{\sum_{i=1}^p \left[M_i + \sum_{j=1}^q M_{ij} \right]} \quad \text{Eq 16}$$

(xi) The affected source is in compliance if the capture system operating parameter is operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with § 63.828(a)(5) for each three hour period, and

(A) The organic volatile matter collection and recovery efficiency, R_v , is 95 percent or greater, or

(B) The organic HAP emission rate based on solids applied, L, is 0.20 kg organic HAP per kg solids applied or less, or

(C) The organic HAP emission rate based on material applied, S, is 0.04 kg organic HAP per kg material applied or less, or

(D) The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP, H_a , as determined using paragraph (e) of this section.

(d) To demonstrate compliance with the overall organic HAP control efficiency requirement in § 63.825(b)(7) or the overall organic HAP emission rate limitation requirements in § 63.825(b)(8)–(10), each owner or operator using an oxidizer to control emissions shall show compliance by following the procedures in either paragraph (d)(1) or (d)(2) of this section:

(1) demonstrate initial compliance through performance tests of capture efficiency and control device efficiency and continuing compliance through continuous monitoring of capture system and control device operating parameters following the procedures in paragraph (d)(1)(i) through (d)(1)(xi) of this section:

(i) Determine the oxidizer destruction efficiency (E) using the procedure in § 63.827(d).

(ii) Determine the capture system capture efficiency (F) in accordance with § 63.827(e)–(f).

(iii) Calculate the overall organic HAP control efficiency, (R), achieved using Equation 13.

(iv) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on materials applied or emission of less than the calculated allowable organic HAP, measure the mass of each ink, coating, varnish, adhesive, primer, solvent, and other material applied on the press or group of presses controlled by a common solvent recovery device during the month.

(v) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, determine the organic HAP content of each

ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(b)(2).

(vi) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, determine the solids content of each ink, coating, varnish, adhesive, primer, solvent, and other material applied during the month following the procedure in § 63.827(c)(2).

(vii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, organic HAP emission rate based on material applied or emission of less than the calculated allowable organic HAP, calculate the organic HAP emitted during the month, H, for each month using Equation 14.

(viii) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied, calculate the organic HAP emission rate based on solids applied, L, for each month using Equation 15.

(ix) If demonstrating compliance on the basis of organic HAP emission rate based on materials applied, calculate the organic HAP emission rate based on material applied, S, using Equation 16.

(x) Install, calibrate, operate and maintain the instrumentation necessary to measure continuously the site-specific operating parameters established in accordance with § 63.828(a)(4)–(5) whenever a product and packaging rotogravure or wide-web flexographic press is operating.

(xi) The affected source is in compliance, if the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with § 63.828(a)(4) for each three-hour period, and the capture system operating parameter is operated at an average value greater than or less than (as appropriate) the operating parameter value established in accordance with § 63.828(a)(5) for each three hour period, and

(A) The overall organic HAP control efficiency, R, is 95 percent or greater, or

(B) The organic HAP emission rate based on solids applied, L, is 0.20 kg organic HAP per kg solids applied or less, or

(C) The organic HAP emission rate based on material applied, S, is 0.04 kg organic HAP per kg material applied or less, or

(D) The organic HAP emitted during the month, H, is less than the calculated allowable organic HAP, H_a , as determined using paragraph (e) of this section.

(2) Use continuous emission monitors, conduct an initial performance test of capture efficiency, and continuously monitor a site specific operating parameter to assure capture efficiency. Compliance shall be demonstrated in accordance with the requirements of paragraph (c)(2) of this section.

(e) Owners or operators may calculate the monthly allowable HAP emissions, H_a , for demonstrating compliance in accordance with paragraph (b)(6), (c)(1)(xi)(D), (c)(2)(xi)(D), or (d)(1)(xi)(D) of this section as follows:

(1) Determine the as-purchased mass of each ink, coating, varnish, adhesive, primer, and other solids-containing material applied each month, M_i .

(2) Determine the as-purchased solids content of each ink, coating, varnish, adhesive, primer, and other solids-containing material applied each month, in accordance with § 63.827(c)(2), C_{si} .

(3) Determine the as-purchased mass fraction of each ink, coating, varnish, adhesive, primer, and other solids-containing material which was applied at 20 weight-percent or greater solids content, on an as-applied basis, G_i .

(4) Determine the total mass of each solvent, diluent, thinner, or reducer added to materials which were applied at less than 20 weight-percent solids content, on an as-applied basis, each month, M_{Lj} .

(5) Calculate the monthly allowable HAP emissions, H_a , using Equation 17.

$$H_a = 0.20 \left[\sum_{i=1}^p M_i G_i C_{si} \right] + 0.04 \left[\sum_{i=1}^p M_i (1 - G_i) + \sum_{j=1}^q M_{Lj} \right] \quad \text{Eq 17}$$

(f) Owners or operators of product and packaging rotogravure or wide-web flexographic printing presses shall demonstrate compliance according to the procedures in paragraphs (f)(1) through (f)(7) of this section if the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or one or more intermittently-controllable work stations.

(1) The owner or operator of each solvent recovery system used to control one or more product and packaging rotogravure or wide-web flexographic presses for which the owner or operator chooses to comply by means of a liquid-liquid mass balance shall determine the organic HAP emissions for those presses controlled by that solvent recovery system either

(i) in accordance with paragraphs (c)(1)(i)–(iii) and (c)(1)(v)–(viii) of this section if the presses controlled by that solvent recovery system have only always-controlled work stations, or

(ii) in accordance with paragraphs (c)(1)(ii)–(iii), (c)(1)(v)–(vi), and (g) of this section if the presses controlled by that solvent recovery system have one or more never-controlled or intermittently-controllable work stations.

(2) The owner or operator of each solvent recovery system used to control one or more product and packaging rotogravure or wide-web flexographic presses, for which the owner or operator chooses to comply by means of an initial test of capture efficiency, continuous emission monitoring of the control device, and continuous monitoring of a capture system operating parameter, shall

(i) For each capture system delivering emissions to that solvent recovery system, monitor an operating parameter established in accordance with §63.828(a)(5) to assure capture system efficiency, and

(ii) Determine the organic HAP emissions for those presses served by each

capture system delivering emissions to that solvent recovery system either

(A) In accordance with paragraphs (c)(2)(i)–(iii) and (c)(2)(v)–(viii) of this section if the presses served by that capture system have only always-controlled work stations, or

(B) In accordance with paragraphs (c)(2)(ii)–(iii), (c)(2)(v)–(vii), and (g) of this section if the presses served by that capture system have one or more never-controlled or intermittently-controllable work stations.

(3) The owner or operator of each oxidizer used to control emissions from one or more product and packaging rotogravure or wide-web flexographic presses choosing to demonstrate compliance through performance tests of capture efficiency and control device efficiency and continuing compliance through continuous monitoring of capture system and control device operating parameters, shall

(i) Monitor an operating parameter established in accordance with §63.828(a)(4) to assure control device efficiency, and

(ii) For each capture system delivering emissions to that oxidizer, monitor an operating parameter established in accordance with §63.828(a)(5) to assure capture efficiency, and

(iii) Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that oxidizer either

(A) In accordance with paragraphs (d)(1)(i)–(v) and (d)(1)(vii) of this section if the presses served by that capture system have only always-controlled work stations, or

(B) In accordance with paragraphs (d)(1)(i)–(iii), (d)(1)(v), and (g) of this section if the presses served by that capture system have one or more never-controlled or intermittently-controllable work stations.

(4) The owner or operator of each oxidizer used to control emissions from one or more product and packaging rotogravure or wide-web flexographic

presses choosing to demonstrate compliance through an initial capture efficiency test, continuous emission monitoring of the control device and continuous monitoring of a capture system operating parameter, shall

(i) For each capture system delivering emissions to that oxidizer, monitor an operating parameter established in accordance with § 63.828(a)(5) to assure capture efficiency, and

(ii) Determine the organic HAP emissions for those presses served by each capture system delivering emissions to that oxidizer either

(A) In accordance with paragraphs (c)(2)(i)-(iii) and (c)(2)(v)-(viii) of this section if the presses served by that capture system have only always-controlled work stations, or

(B) In accordance with paragraphs (c)(2)(ii)-(iii), (c)(2)(v)-(vii), and (g) of this section if the presses served by that capture system have one or more never-controlled or intermittently-controllable work stations.

(5) The owner or operator of one or more uncontrolled product and packaging rotogravure or wide-web flexographic printing presses shall determine the organic HAP applied on those presses using Equation 8. The organic HAP emitted from an uncontrolled press is equal to the organic HAP applied on that press.

(6) If demonstrating compliance on the basis of organic HAP emission rate based on solids applied or emission of less than the calculated allowable organic HAP, the owner or operator shall determine the solids content of each ink, coating, varnish, adhesive, primer, solvent and other material applied during the month following the procedure in § 63.827(c)(2).

(7) The owner or operator shall determine the organic HAP emissions for the affected source for the month by summing all organic HAP emissions calculated according to paragraphs (f)(1), (f)(2)(ii), (f)(3)(iii), (f)(4)(ii), and (f)(5) of this section. The affected source is in compliance for the month, if all operating parameters required to be monitored under paragraphs (f)(2)-(4) of this section were maintained at the appropriate values, and

(i) The total mass of organic HAP emitted by the affected source was not

more than four percent of the total mass of inks, coatings, varnishes, adhesives, primers, solvents, diluents, reducers, thinners and other materials applied by the affected source, or

(ii) The total mass of organic HAP emitted by the affected source was not more than 20 percent of the total mass of solids applied by the affected source, or

(iii) The total mass of organic HAP emitted by the affected source was not more than the equivalent allowable organic HAP emissions for the affected source, H_a , calculated in accordance with paragraph (e) of this section, or

(iv) The total mass of organic HAP emitted by the affected source was not more than five percent of the total mass of organic HAP applied by the affected source. The total mass of organic HAP applied by the affected source in the month shall be determined by the owner or operator using Equation 8.

(g) Owners or operators determining organic HAP emissions from a press or group of presses having one or more never-controlled or intermittently-controllable work stations and using the procedures specified in paragraphs (f)(1)(ii), (f)(2)(ii)(B), (f)(3)(iii)(B), or (f)(4)(ii)(B) of this section shall for that press or group of presses:

(1) Determine the sum of the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on intermittently-controllable work stations in bypass mode and the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on never-controlled work stations during the month, M_{Bi} .

(2) Determine the sum of the mass of all solvents, reducers, thinners, and other diluents which are applied on intermittently-controllable work stations in bypass mode and the mass of all solvents, reducers, thinners, and other diluents which are applied on never-controlled work stations during the month, M_{Bj} .

(3) Determine the sum of the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on intermittently-controllable work stations

in controlled mode and the mass of all inks, coatings, varnishes, adhesives, primers, and other solids-containing materials which are applied on always-controlled work stations during the month, M_{Bj} .

(4) Determine the sum of the mass of all solvents, reducers, thinners, and other diluents which are applied on intermittently-controllable work stations in controlled mode and the mass

of all solvents, reducers, thinners, and other diluents which are applied on always-controlled work stations during the month, M_{Cj} .

(5) For each press or group of presses for which the owner or operator uses the provisions of paragraph (f)(1)(ii) of this section, the owner or operator shall calculate the organic HAP emitted during the month using Equation 18.

$$H = \left[\sum_{i=1}^p M_{Ci} C_{hi} + \sum_{j=1}^q M_{Cj} C_{hj} \right] \left[1 - \frac{M_{vr}}{\sum_{i=1}^p M_{Ci} C_{vi} + \sum_{j=1}^q M_{Cj}} \right] + \left[\sum_{i=1}^p M_{Bi} C_{hi} + \sum_{j=1}^q M_{Bj} C_{hj} \right] \quad \text{Eq 18}$$

(6) For each press or group of presses for which the owner or operator uses the provisions of paragraphs (f)(2)(ii)(B), (f)(3)(iii)(B), or (f)(4)(ii)(B)

of this section, the owner or operator shall calculate the organic HAP emitted during the month using Equation (19).

$$H = \left[\sum_{i=1}^p M_{Ci} C_{hi} + \sum_{j=1}^q M_{Cj} C_{hj} \right] \left[1 - \left(\frac{E}{100} - \frac{F}{100} \right) \right] + \left[\sum_{i=1}^p M_{Bi} C_{hi} + \sum_{j=1}^q M_{Bj} C_{hj} \right] \quad \text{Eq 19}$$

(h) If the affected source operates more than one capture system or more than one control device, and has no never-controlled work stations and no intermittently-controllable work stations, then the affected source is in compliance with the 95 percent overall organic HAP control efficiency requirement for the month if for each press or group of presses controlled by a common control device:

(1) The volatile matter collection and recovery efficiency, R_v , as determined by paragraphs (c)(1)(i), (c)(1)(iii), and (c)(1)(v)-(vii) of this section is equal to or greater than 95 percent, or

(2) The overall organic HAP control efficiency as determined by paragraphs (c)(2)(iii) and (c)(2)(v)-(vii) of this section for each press or group of presses served by that control device and a common capture system is equal to or greater than 95 percent and the average capture system operating parameter

value for each capture system serving that control device is greater than or less than (as appropriate) the operating parameter value established for that capture system in accordance with § 63.828(a)(5) for each three hour period, or

(3) The overall organic HAP control efficiency as determined by paragraphs (d)(1)(i)-(iii) and (d)(1)(x) of this section for each press or group of presses served by that control device and a common capture system is equal to or greater than 95 percent, the oxidizer is operated such that the average operating parameter value is greater than the operating parameter value established in accordance with § 63.828(a)(4) for each three hour period, and the average capture system operating parameter value for each capture system serving that control device is greater than or less than (as appropriate) the operating parameter value established for that

capture system in accordance with § 63.828(a)(5) for each three hour period.

§ 63.826 Compliance dates.

(a) The compliance date for an owner or operator of an existing affected source subject to the provisions of this subpart is May 30, 1999.

(b) The compliance date for an owner or operator of a new affected source subject to the provisions of this subpart is immediately upon start-up of the affected source, or May 30, 1996, whichever is later.

(c) Affected sources which have undergone reconstruction are subject to the requirements for new affected sources. The costs associated with the purchase and installation of air pollution control equipment are not considered in determining whether the affected source has been reconstructed. Additionally, the costs of retrofitting and replacement of equipment that is installed specifically to comply with this subpart are not considered reconstruction costs.

§ 63.827 Performance test methods.

(a) An owner or operator using a control device to comply with the requirements of §§ 63.824–63.825 is not required to conduct an initial performance test to demonstrate compliance if one or more of the criteria in paragraphs (a)(1) through (a)(3) of this section are met:

(1) A control device that is in operation prior to May 30, 1996, does not need to be tested if

(i) It is equipped with continuous emission monitors for determining inlet and outlet total organic volatile matter concentration, and capture efficiency has been determined in accordance with the requirements of this subpart, such that an overall HAP control efficiency can be calculated, and

(ii) The continuous emission monitors are used to demonstrate continuous compliance in accordance with § 63.828, or

(2) The owner or operator has met the requirements of either § 63.7(e)(2)(iv) or § 63.7(h), or

(3) The control device is a solvent recovery system and the owner or operator chooses to comply by means of a

monthly liquid-liquid material balance.

(b) Determination of the organic HAP content of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, diluents, and other materials for the purpose of meeting the requirements of § 63.824 shall be conducted according to paragraph (b)(1) of this section. Determination of the organic HAP content of inks, coatings, varnishes, adhesives, primers, solvents, thinners, reducers, diluents, and other materials for the purpose of meeting the requirements of § 63.825 shall be conducted according to paragraph (b)(2) of this section.

(1) Each owner or operator of a publication rotogravure facility shall determine the organic HAP weight-fraction of each ink, coating, varnish, adhesive, primer, solvent, and other material used in a publication rotogravure affected source by following one of the procedures in paragraphs (b)(1)(i) through (b)(1)(iii) of this section:

(i) The owner or operator may test the material in accordance with Method 311 of appendix A of this part 63. The Method 311 determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 311, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The recovery efficiency of the technique must be determined for all of the target organic HAP and a correction factor, if necessary, must be determined and applied.

(ii) The owner or operator may determine the volatile matter content of the material in accordance with § 63.827(c)(1) and use this value for the organic HAP content for all compliance purposes.

(iii) The owner or operator may, except as noted in paragraph (b)(1)(iv) of this section, rely on formulation data provided by the manufacturer of the material on a CPDS if

(A) The manufacturer has included in the organic HAP content determination all HAP present at a level greater than 0.1 percent in any raw material used, weighted by the mass fraction of

each raw material used in the material, and

(B) The manufacturer has determined the HAP content of each raw material present in the formulation by Method 311 of appendix A of this part 63, or by an alternate method approved by the Administrator, or by reliance on a CPDS from a raw material supplier prepared in accordance with § 63.827(b)(1)(iii)(A).

(iv) In the event of any inconsistency between the Method 311 of appendix A of this part 63 test data and formulation data, that is, if the Method 311 test value is higher, the Method 311 test data shall govern, unless after consultation, an owner or operator demonstrates to the satisfaction of the enforcement authority that the formulation data are correct.

(2) Each owner or operator of a product and packaging rotogravure or wide-web flexographic printing facility shall determine the organic HAP weight fraction of each ink, coating, varnish, adhesive, primer, solvent, thinner, reducer, diluent, and other material applied by following one of the procedures in paragraphs (b)(2)(i) through (b)(2)(iii) of this section:

(i) The owner or operator may test the material in accordance with Method 311 of appendix A of this part 63. The Method 311 determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 311, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The recovery efficiency of the technique must be determined for all of the target organic HAP and a correction factor, if necessary, must be determined and applied.

(ii) The owner or operator may determine the volatile matter content of the material in accordance with § 63.827(c)(2) and use this value for the organic HAP content for all compliance purposes.

(iii) The owner or operator may, except as noted in paragraph (b)(2)(iv) of this section, rely on formulation data provided by the manufacturer of the material on a CPDS if

(A) The manufacturer has included in the organic HAP content determination, all organic HAP present at a level greater than 0.1 percent in any raw material used, weighted by the mass fraction of each raw material used in the material, and

(B) The manufacturer has determined the organic HAP content of each raw material present in the formulation by Method 311 of appendix A of this part 63, or, by an alternate method approved by the Administrator, or, by reliance on a CPDS from a raw material supplier prepared in accordance with § 63.827(b)(2)(iii)(A).

(iv) In the event of any inconsistency between the Method 311 of appendix A of this part 63 test data and a facility's formulation data, that is, if the Method 311 test value is higher, the Method 311 test data shall govern, unless after consultation, an owner or operator demonstrates to the satisfaction of the enforcement authority that the formulation data are correct.

(c) Determination by the owner or operator of the volatile matter content of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, diluents, and other materials used for the purpose of meeting the requirements of § 63.824 shall be conducted according to paragraph (c)(1) of this section. Determination by the owner or operator of the volatile matter and solids content of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, diluents, and other materials applied for the purpose of meeting the requirements of § 63.825 shall be conducted according to paragraph (c)(2) of this section.

(1) Each owner or operator of a publication rotogravure facility shall determine the volatile matter weight-fraction of each ink, coating, varnish, adhesive, primer, solvent, reducer, thinner, diluent, and other material used using Method 24A of 40 CFR part 60, appendix A. The Method 24A determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 24A, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The

owner or operator may rely on formulation data, subject to the provisions of paragraph (c)(3) of this section.

(2) Each owner or operator of a product and packaging rotogravure or wide-web flexographic printing facility shall determine the volatile matter and solids weight-fraction of each ink, coating, varnish, adhesive, primer, solvent, reducer, thinner, diluent, and other material applied using Method 24 of 40 CFR part 60, appendix A. The Method 24 determination may be performed by the manufacturer of the material and the results provided to the owner or operator. If these values cannot be determined using Method 24, the owner or operator shall submit an alternative technique for determining their values for approval by the Administrator. The owner or operator may rely on formulation data, subject to the provisions of paragraph (c)(3) of this section.

(3) Owners or operators may determine the volatile matter content of materials based on formulation data, and may rely on volatile matter content data provided by material suppliers. In the event of any inconsistency between the formulation data and the results of Test Methods 24 or 24A of 40 CFR part 60, appendix A, the applicable test method shall govern, unless after consultation, the owner or operator can demonstrate to the satisfaction of the enforcement agency that the formulation data are correct.

(d) A performance test of a control device to determine destruction efficiency for the purpose of meeting the requirements of §§ 63.824–63.825 shall be conducted by the owner or operator in accordance with the following:

(1) An initial performance test to establish the destruction efficiency of an oxidizer and the associated combustion zone temperature for a thermal oxidizer and the associated catalyst bed inlet temperature for a catalytic oxidizer shall be conducted and the data reduced in accordance with the following reference methods and procedures:

(i) Method 1 or 1A of 40 CFR part 60, appendix A is used for sample and velocity traverses to determine sampling locations.

(ii) Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A is used to determine gas volumetric flow rate.

(iii) Method 3 of 40 CFR part 60, appendix A is used for gas analysis to determine dry molecular weight.

(iv) Method 4 of 40 CFR part 60, appendix A is used to determine stack gas moisture.

(v) Methods 2, 2A, 3, and 4 of 40 CFR part 60, appendix A shall be performed, as applicable, at least twice during each test period.

(vi) Method 25 of 40 CFR part 60, Appendix A, shall be used to determine organic volatile matter concentration, except as provided in paragraphs (d)(1)(vi)(A)–(C) of this section. The owner or operator shall submit notice of the intended test method to the Administrator for approval along with notice of the performance test required under § 63.7(c). The owner or operator may use Method 25A of 40 CFR part 60, appendix A, if

(A) An exhaust gas organic volatile matter concentration of 50 parts per million by volume (ppmv) or less is required to comply with the standards of §§ 63.824–63.825, or

(B) The organic volatile matter concentration at the inlet to the control system and the required level of control are such to result in exhaust gas organic volatile matter concentrations of 50 ppmv or less, or

(C) Because of the high efficiency of the control device, the anticipated organic volatile matter concentration at the control device exhaust is 50 ppmv or less, regardless of inlet concentration.

(vii) Each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the affected source is operating under normal operating conditions. For the purpose of determining organic volatile matter concentrations and mass flow rates, the average of results of all runs shall apply.

(viii) Organic volatile matter mass flow rates shall be determined using Equation 20:

$$M_f = Q_{sd} \left[\sum_{i=1}^n C_i MW_i \right] [0.0416] [10^{-6}] \quad \text{Eq 20}$$

(ix) Emission control device efficiency shall be determined using Equation 21:

$$E = \frac{M_{fi} - M_{fo}}{M_{fi}} \quad \text{Eq 21}$$

(2) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance test. Operations during periods of start-up, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(3) For the purpose of determining the value of the oxidizer operating parameter that will demonstrate continuing compliance, the time-weighted average of the values recorded during the performance test shall be computed. For an oxidizer other than catalytic oxidizer, the owner or operator shall establish as the operating parameter the minimum combustion temperature. For a catalytic oxidizer, the owner or operator shall establish as the operating parameter the minimum gas temperature upstream of the catalyst bed. These minimum temperatures are the operating parameter values that demonstrate continuing compliance with the requirements of §§ 63.824–63.825.

(e) A performance test to determine the capture efficiency of each capture system venting organic emissions to a control device for the purpose of meeting the requirements of §§ 63.824(b)(1)(ii), 63.824(b)(2), 63.825(c)(2), 63.825(d)(1)–(2), 63.825(f)(2)–(4), or 63.825(h)(2)–(3) shall be conducted by the owner or operator in accordance with the following:

(1) For permanent total enclosures, capture efficiency shall be assumed as 100 percent. Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure as found in appendix B to § 52.741 of part 52 of this chapter shall be used to confirm that an enclosure meets the requirements for permanent total enclosure.

(2) For temporary total enclosures, the capture efficiency shall be determined according to the protocol specified in § 52.741(a)(4)(iii)(B) of part 52 of this chapter. The owner or operator may exclude never-controlled work stations from such capture efficiency determinations.

(f) As an alternative to the procedures specified in § 63.827(e) an owner or operator required to conduct a capture efficiency test may use any capture efficiency protocol and test methods that satisfy the criteria of either the Data Quality Objective (DQO) or the Lower Confidence Limit (LCL) approach as described in Appendix A of this subpart. The owner or operator may exclude never-controlled work stations from such capture efficiency determinations.

§ 63.828 Monitoring requirements.

(a) Following the date on which the initial performance test of a control device is completed, to demonstrate continuing compliance with the standard, the owner or operator shall monitor and inspect each control device required to comply with §§ 63.824–63.825 to ensure proper operation and maintenance by implementing the applicable requirements in paragraph (a)(1) through (a)(5) of this section.

(1) Owners or operators of product and packaging rotogravure or wide-web flexographic presses with intermittently-controllable work stations shall follow one of the procedures in paragraphs (a)(1)(i) through (a)(1)(iv) of this section for each dryer associated with such a work station:

(i) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that provides a record indicating whether the exhaust stream from the dryer was directed to the control device or was diverted from the control device. The time and flow control position must be recorded at least once per hour, as well as every time

the flow direction is changed. The flow control position indicator shall be installed at the entrance to any bypass line that could divert the exhaust stream away from the control device to the atmosphere.

(ii) Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration; a visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve or damper is maintained in the closed position and the exhaust stream is not diverted through the bypass line.

(iii) Ensure that any bypass line valve or damper is in the closed position through continuous monitoring of valve position. The monitoring system shall be inspected at least once every month to ensure that it is functioning properly.

(iv) Use an automatic shutdown system in which the press is stopped when flow is diverted away from the control device to any bypass line. The automatic system shall be inspected at least once every month to ensure that it is functioning properly.

(2) Compliance monitoring shall be subject to the provisions of paragraphs (a)(2)(i) and (a)(2)(ii) of this section, as applicable.

(i) All continuous emission monitors shall comply with performance specifications (PS) 8 or 9 of 40 CFR part 60, appendix B, as appropriate. The requirements of appendix F of 40 CFR part 60 shall also be followed. In conducting the quarterly audits required by appendix F, owners or operators must challenge the monitors with compounds representative of the gaseous emission stream being controlled.

(ii) All temperature monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturers specifications. The calibration of the chart recorder, data logger, or temperature indicator shall be verified every three months; or the chart recorder, data logger, or temperature indicator shall be replaced. The replacement shall be done either if the owner or operator chooses not to perform the calibration, or if the equipment cannot be calibrated properly.

(3) An owner or operator complying with §§63.824–63.825 through continuous emission monitoring of a control device shall install, calibrate, operate, and maintain continuous emission monitors to measure the total organic volatile matter concentration at both the control device inlet and the outlet.

(4) An owner or operator complying with the requirements of §§63.824–63.825 through the use of an oxidizer and demonstrating continuous compliance through monitoring of an oxidizer operating parameter shall:

(i) For an oxidizer other than a catalytic oxidizer, install, calibrate, operate, and maintain a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or ± 1 $^{\circ}\text{C}$, whichever is greater. The thermocouple or temperature sensor shall be installed in the combustion chamber at a location in the combustion zone.

(ii) For a catalytic oxidizer, install, calibrate, operate, and maintain a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or ± 1 $^{\circ}\text{C}$, whichever is greater. The thermocouple or temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet.

(5) An owner or operator complying with the requirements of §§63.824–63.825 through the use of a control device and demonstrating continuous compliance by monitoring an operating parameter to ensure that the capture efficiency measured during the initial compliance test is maintained, shall:

(i) Submit to the Administrator with the compliance status report required by §63.9(h) of the General Provisions, a plan that

(A) Identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained,

(B) Discusses why this parameter is appropriate for demonstrating ongoing compliance, and

(C) Identifies the specific monitoring procedures;

(ii) Set the operating parameter value, or range of values, that demonstrate compliance with §§63.824–63.825, and

(iii) Conduct monitoring in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.

(b) Any excursion from the required operating parameters which are monitored in accordance with paragraphs (a)(4) and (a)(5) of this section, unless otherwise excused, shall be considered a violation of the emission standard.

§ 63.829 Recordkeeping requirements.

(a) The recordkeeping provisions of 40 CFR part 63 subpart A of this part that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart.

(b) Each owner or operator of an affected source subject to this subpart shall maintain the records specified in paragraphs (b)(1) through (b)(3) of this section on a monthly basis in accordance with the requirements of § 63.10(b)(1) of this part:

(1) Records specified in § 63.10(b)(2) of this part, of all measurements needed to demonstrate compliance with this standard, such as continuous emission monitor data, control device and capture system operating parameter data, material usage, HAP usage, volatile matter usage, and solids usage that support data that the source is required to report.

(2) Records specified in § 63.10(b)(3) of this part for each applicability determination performed by the owner or operator in accordance with the requirements of § 63.820(a) of this subpart, and

(3) Records specified in § 63.10(c) of this part for each continuous monitoring system operated by the owner or operator in accordance with the requirements of § 63.828(a) of this subpart.

(c) Each owner or operator of an affected source subject to this subpart shall maintain records of all liquid-liquid material balances performed in accordance with the requirements of §§63.824–63.825 of this subpart. The records shall be maintained in accord-

ance with the requirements of § 63.10(b) of this part.

(d) The owner or operator of each facility which commits to the criteria of § 63.820(a)(2) shall maintain records of all required measurements and calculations needed to demonstrate compliance with these criteria, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

(e) The owner or operator of each facility which meets the limits and criteria of § 63.821(b)(1) shall maintain records as required in paragraph (e)(1) of this section. The owner or operator of each facility which meets the limits and criteria of § 63.821(b)(2) shall maintain records as required in paragraph (e)(2) of this section. Owners or operators shall maintain these records for five years, and upon request, submit them to the Administrator.

(1) For each facility which meets the criteria of § 63.821(b)(1), the owner or operator shall maintain records of the total volume of each material applied on product and packaging rotogravure or wide-web flexographic printing presses during each month.

(2) For each facility which meets the criteria of § 63.821(b)(2), the owner or operator shall maintain records of the total volume and organic HAP content of each material applied on product and packaging rotogravure or wide-web flexographic printing presses during each month.

(f) The owner or operator choosing to exclude from an affected source, a product and packaging rotogravure or wide-web flexographic press which meets the limits and criteria of § 63.821(a)(2)(ii)(A) shall maintain the records specified in paragraphs (f)(1) and (f)(2) of this section for five years and submit them to the Administrator upon request:

(1) The total mass of each material applied each month on the press, including all inboard and outboard stations, and

(2) The total mass of each material applied each month on the press by product and packaging rotogravure or wide-web flexographic printing operations.

§ 63.830 Reporting requirements.

(a) The reporting provisions of 40 CFR part 63 subpart A of this part that apply and those that do not apply to owners and operators of affected sources subject to this subpart are listed in Table 1 of this subpart.

(b) Each owner or operator of an affected source subject to this subpart shall submit the reports specified in paragraphs (b)(1) through (b)(6) of this section to the Administrator:

(1) An initial notification required in § 63.9(b).

(i) Initial notifications for existing sources shall be submitted no later than one year before the compliance date specified in § 63.826(a).

(ii) Initial notifications for new and reconstructed sources shall be submitted as required by § 63.9(b).

(iii) For the purpose of this subpart, a Title V or part 70 permit application may be used in lieu of the initial notification required under § 63.9(b), provided the same information is contained in the permit application as required by § 63.9(b), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA.

(iv) Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

(2) A Notification of Performance Tests specified in § 63.7 and § 63.9(e) of this part. This notification, and the site-specific test plan required under § 63.7(c)(2) shall identify the operating parameter to be monitored to ensure that the capture efficiency measured during the performance test is maintained. The operating parameter identified in the site-specific test plan shall be considered to be approved unless explicitly disapproved, or unless comments received from the Administrator require monitoring of an alternate parameter.

(3) A Notification of Compliance Status specified in § 63.9(h) of this part.

(4) Performance test reports specified in § 63.10(d)(2) of this part.

(5) Start-up, shutdown, and malfunction reports specified in § 63.10(d)(5) of this part, except that the provisions in subpart A pertaining to start-ups, shut-

downs, and malfunctions do not apply unless a control device is used to comply with this subpart.

(i) If actions taken by an owner or operator during a start-up, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are not completely consistent with the procedures specified in the source's start-up, shutdown, and malfunction plan specified in § 63.6(e)(3) of this part, the owner or operator shall state such information in the report. The start-up, shutdown, or malfunction report shall consist of a letter containing the name, title, and signature of the responsible official who is certifying its accuracy, that shall be submitted to the Administrator.

(ii) Separate start-up, shutdown, or malfunction reports are not required if the information is included in the report specified in paragraph (b)(6) of this section.

(6) A summary report specified in § 63.10(e)(3) of this part shall be submitted on a semi-annual basis (i.e., once every six-month period). In addition to a report of operating parameter exceedances as required by § 63.10(e)(3)(i), the summary report shall include, as applicable:

(i) Exceedances of the standards in §§ 63.824–63.825.

(ii) Exceedances of either of the criteria of § 63.820(a)(2).

(iii) Exceedances of the criterion of § 63.821(b)(1) and the criterion of § 63.821(b)(2) in the same month.

(iv) Exceedances of the criterion of § 63.821(a)(2)(ii)(A).

§ 63.831 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under 40 CFR part 63 subpart E of this part, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority which will not be delegated to States: § 63.827(b), approval of alternate test method for organic HAP content determination; § 63.827(c), approval of alternate test method for volatile matter determination.

§§ 63.832–63.839 [Reserved]

Environmental Protection Agency

Pt. 63, Subpt. KK, Table 1

TABLE 1 TO SUBPART KK.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART KK

General provisions reference	Applicable to subpart KK	Comment
§ 63.1(a)(1)–(a)(4)	Yes.	
§ 63.1(a)(5)	No	Section reserved.
§ 63.1(a)(6)–(a)(8)	No.	
§ 63.1(a)(9)	No	Section reserved.
§ 63.1(a)(10)–(a)(14)	Yes.	
§ 63.1(b)(1)	No	Subpart KK specifies applicability.
§ 63.1(b)(2)–(b)(3)	Yes.	
§ 63.1(c)(1)	Yes.	
§ 63.1(c)(2)	No	Area sources are not subject to subpart KK.
§ 63.1(c)(3)	No	Section reserved.
§ 63.1(c)(4)	Yes.	
§ 63.1(c)(5)	No.	
§ 63.1(d)	No	Section reserved.
§ 63.1(e)	Yes.	
§ 63.2	Yes	Additional definitions in subpart KK.
§ 63.3(a)–(c)	Yes.	
§ 63.4(a)(1)–(a)(3)	Yes.	
§ 63.4(a)(4)	No	Section reserved.
§ 63.4(a)(5)	Yes.	
§ 63.4(b)–(c)	Yes.	
§ 63.5(a)(1)–(a)(2)	Yes.	
§ 63.5(b)(1)	Yes.	
§ 63.5(b)(2)	No	Section reserved.
§ 63.5(b)(3)–(b)(6)	Yes.	
§ 63.5(c)	No	Section reserved.
§ 63.5(d)	Yes.	
§ 63.5(e)	Yes.	
§ 63.5(f)	Yes.	
§ 63.6(a)	Yes.	
§ 63.6(b)(1)–(b)(5)	Yes.	
§ 63.6(b)(6)	No	Section reserved.
§ 63.6(b)(7)	Yes.	
§ 63.6(c)(1)–(c)(2)	Yes.	
§ 63.6(c)(3)–(c)(4)	No	Sections reserved.
§ 63.6(c)(5)	Yes.	
§ 63.6(d)	No	Section reserved.
§ 63.6(e)	Yes	Provisions pertaining to start-ups, shutdowns, malfunctions, and CMS do not apply unless an add-on control system is used.
§ 63.6(f)	Yes.	
§ 63.6(g)	Yes.	
§ 63.6(h)	No	Subpart KK does not require COMS.
§ 63.6(i)(1)–(i)(14)	Yes.	
§ 63.6(i)(15)	No	Section reserved.
§ 63.6(i)(16)	Yes.	
§ 63.6(j)	Yes.	
§ 63.7	Yes.	
§ 63.8(a)(1)–(a)(2)	Yes.	
§ 63.8(a)(3)	No	Section reserved.
§ 63.8(a)(4)	No	Subpart KK specifies the use of solvent recovery devices or oxidizers.
§ 63.8(b)	Yes.	
§ 63.8(c)(1)–(3)	Yes.	
§ 63.8(c)(4)	No	Subpart KK specifies CMS sampling requirements.
§ 63.8(c)(5)	No	Subpart KK does not require COMS.
§ 63.8(c)(6)–(c)(8)	Yes	Provisions for COMS are not applicable.
§ 63.8(d)–(f)	Yes.	
§ 63.8(g)	No	Subpart KK specifies CMS data reduction requirements.
§ 63.9(a)	Yes.	
§ 63.9(b)(1)	Yes.	
§ 63.9(b)(2)	Yes	Initial notification submission date extended.
§ 63.9(b)(3)–(b)(5)	Yes.	
§ 63.9(c)–(e)	Yes.	
§ 63.9(f)	No	Subpart KK does not require opacity and visible emissions observations.
§ 63.9(g)	Yes	Provisions for COMS are not applicable.
§ 63.9(h)(1)–(h)(3)	Yes.	
§ 63.9(h)(4)	No	Section reserved.
§ 63.9(h)(5)–(h)(6)	Yes.	
§ 63.9(i)	Yes.	
§ 63.9(j)	Yes.	
§ 63.10(a)	Yes.	

TABLE 1 TO SUBPART KK.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART KK—Continued

General provisions reference	Applicable to subpart KK	Comment
§ 63.10(b)(1)–(b)(3)	Yes.	Sections reserved.
§ 63.10(c)(1)	Yes.	
§ 63.10(c)(2)–(c)(4)	No	
§ 63.10(c)(5)–(c)(8)	Yes.	Section reserved.
§ 63.10(c)(9)	No	
§ 63.10(c)(10)–(c)(15)	Yes.	Subpart KK does not require opacity and visible emissions observations.
§ 63.10(d)(1)–(d)(2)	Yes.	
§ 63.10(d)(3)	No	
§ 63.10(d)(4)–(d)(5)	Yes.	Provisions for COMS are not applicable.
§ 63.10(e)	Yes	
§ 63.10(f)	Yes.	
§ 63.11	No	Subpart KK specifies the use of solvent recovery devices or oxidizers.
§ 63.12	Yes.	
§ 63.13	Yes.	
§ 63.14	Yes.	
§ 63.15	Yes.	

APPENDIX A TO SUBPART KK TO PART 63—DATA QUALITY OBJECTIVE AND LOWER CONFIDENCE LIMIT APPROACHES FOR ALTERNATIVE CAPTURE EFFICIENCY PROTOCOLS AND TEST METHODS

1. Introduction

1.1 Alternative capture efficiency (CE) protocols and test methods that satisfy the criteria of either the data quality objective (DQO) approach or the lower confidence limit (LCL) approach are acceptable under § 63.827(f). The general criteria for alternative CE protocols and test methods to qualify under either the DQO or LCL approach are described in section 2. The DQO approach and criteria specific to the DQO approach are described in section 3. The LCL approach and criteria specific to the LCL approach are described in section 4. The recommended reporting for alternative CE protocols and test methods are presented in section 5. The recommended recordkeeping for alternative CE protocols and test methods are presented in section 6.

1.2 Although the Procedures L, G.1, G.2, F.1, and F.2 in § 52.741 of part 52 were developed for TTE and BE testing, the same procedures can also be used in an alternative CE protocol. For example, a traditional liquid/gas mass balance CE protocol could employ Procedure L to measure liquid VOC input and Procedure G.1 to measure captured VOC.

2. General Criteria for DQO and LCL Approaches

2.1 The following general criteria must be met for an alternative capture efficiency protocol and test methods to qualify under the DQO or LCL approach.

2.2 An alternative CE protocol must consist of at least three valid test runs. Each

test run must be at least 20 minutes long. No test run can be longer than 24 hours.

2.3 All test runs must be separate and independent. For example, liquid VOC input and output must be determined independently for each run. The final liquid VOC sample from one run cannot be the initial sample for another run. In addition, liquid input for an entire day cannot be apportioned among test runs based on production.

2.4 Composite liquid samples cannot be used to obtain an “average composition” for a test run. For example, separate initial and final coating samples must be taken and analyzed for each run; initial and final samples cannot be combined prior to analysis to derive an “average composition” for the test run.

2.5 All individual test runs that result in a CE of greater than 105 percent are invalid and must be discarded.

2.6 If the source can demonstrate to the regulatory agency that a test run should not be considered due to an identified testing or analysis error such as spillage of part of the sample during shipping or an upset or improper operating conditions that is not considered part of normal operation then the test result for that individual test run may be discarded. This limited exception allows sources to discard as “outliers” certain individual test runs without replacing them with a valid test run as long as the facility has at least three valid test runs to use when calculating its DQO or LCL. This exception is limited solely to test runs involving the types of errors identified above.

2.7 All valid test runs that are conducted must be included in the average CE determination. The individual test run CE results and average CE results cannot be truncated (i.e., 105 percent cannot be reported as 100+ percent) for purposes of meeting general or specific criteria for either the DQO or the

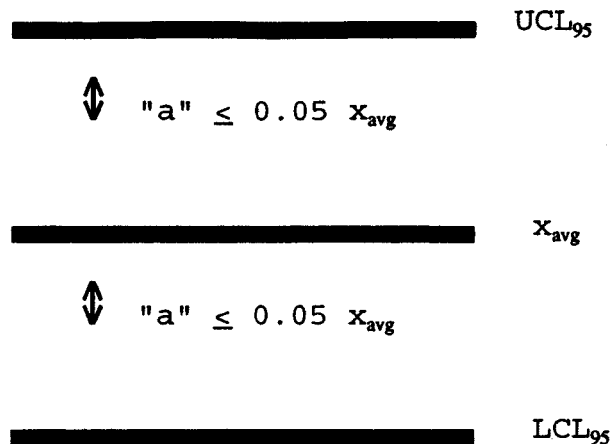
LCL. If the DQO is satisfied and the average CE is greater than 100, then 100 percent CE must be considered the result of the test.

2.8 Alternative test methods for measuring VOC concentration must include a three-point calibration of the gas analysis instrument in the expected concentration range.

3. Data Quality Objective Approach

3.1 The purpose of the DQO is to allow sources to use alternative CE protocols and test methods while ensuring reasonable pre-

cision consistent with pertinent requirements of the Clean Air Act. In addition to the general criteria described in section 2, the specific DQO criterion is that the width of the two-sided 95 percent confidence interval of the mean measured value must be less than or equal to 10 percent of the mean measured value (see Figure 1). This ensures that 95 percent of the time, when the DQO is met, the actual CE value will be ± 5 percent of the mean measured value (assuming that the test protocol is unbiased).



3.2 The DQO calculation is made as follows using Equations 1 and 2:

$$P = \frac{a}{x_{avg}} 100 \quad \text{Eq 1}$$

$$a = \frac{t_{0.975} s}{\sqrt{n}} \quad \text{Eq 2}$$

Where:

a=distance from the average measured CE value to the endpoints of the 95-percent

(two-sided) confidence interval for the measured value.

n=number of valid test runs.

P=DQO indicator statistic, distance from the average measured CE value to the endpoints of the 95-percent (two-sided) confidence interval, expressed as a percent of the average measured CE value.

s=sample standard deviation.

$t_{0.975}$ =t-value at the 95-percent confidence level (see Table 1).

x_{avg} =average measured CE value (calculated from all valid test runs).

x_i =the CE value calculated from the i th test run.

Number of valid test runs, n	$t_{0.975}$	$t_{0.90}$	Number of valid test runs, n	$t_{0.975}$	$t_{0.90}$
1 or 2	N/A	N/A	12	2.201	1.363
3	4.303	1.886	13	2.179	1.356
4	3.182	1.638	14	2.160	1.350
5	2.776	1.533	15	2.145	1.345
6	2.571	1.476	16	2.131	1.341
7	2.447	1.440	17	2.120	1.337
8	2.365	1.415	18	2.110	1.333
9	2.306	1.397	19	2.101	1.330
10	2.262	1.383	20	2.093	1.328
1	12.228	1.372	21	2.086	1.325

TABLE 1.—T-VALUES

3.3 The sample standard deviation and average CE value are calculated using Equations 3 and 4 as follows:

$$s = \left[\frac{\sum_{i=1}^n (x_i - x_{\text{avg}})^2}{n-1} \right]^{0.5} \quad \text{Eq 3}$$

$$x_{\text{avg}} = \frac{\sum_{i=1}^n x_i}{n} \quad \text{Eq 4}$$

3.4 The DQO criteria are achieved when all of the general criteria in section 2 are achieved and $P \leq 5$ percent (i.e., the specific DQO criterion is achieved). In order to meet this objective, facilities may have to conduct more than three test runs. Examples of calculating P , given a finite number of test runs, are shown below. (For purposes of this example it is assumed that all of the general criteria are met.)

3.5 Facility A conducted a CE test using a traditional liquid/gas mass balance and submitted the following results and the calculations shown in Equations 5 and 6:

Run	CE
1	96.1
2	105.0
3	101.2

Therefore:

$n=3$
 $t_{0.975}=4.30$
 $x_{\text{avg}}=100.8$
 $s=4.51$

$$a = \frac{(4.30)(4.51)}{\sqrt{n}} = 11.20 \quad \text{Eq 5}$$

$$P = \frac{11.2}{100.8} 100 = 11.11 \quad \text{Eq 6}$$

3.6 Since the facility did not meet the specific DQO criterion, they ran three more test runs.

Run	CE
4	93.2
5	96.2
6	87.6

3.7 The calculations for Runs 1–6 are made as follows using Equations 7 and 8:

$n=6$
 $t_{0.975}=2.57$
 $x_{\text{avg}}=96.6$
 $s=6.11$

$$a = \frac{(2.57)(6.11)}{\sqrt{6}} = 6.41 \quad \text{Eq 7}$$

$$P = \frac{6.41}{96.6} 100 = 6.64 \quad \text{Eq 8}$$

3.8 The facility still did not meet the specific DQO criterion. They ran three more test runs with the following results:

Run	CE
7	92.9
8	98.3
9	91.0

3.9 The calculations for Runs 1–9 are made as follows using Equations 9 and 10:

$n=9$
 $t_{0.975}=2.31$
 $x_{\text{avg}}=95.7$
 $s=5.33$

$$a = \frac{(2.31)(5.33)}{\sqrt{9}} = 4.10 \quad \text{Eq 9}$$

$$P = \frac{4.10}{95.7} 100 = 4.28 \quad \text{Eq 10}$$

3.10 Based on these results, the specific DQO criterion is satisfied. Since all of the general criteria were also satisfied, the average CE from the nine test runs can be used to determine compliance.

4. Lower Confidence Limit Approach

4.1 The purpose of the LCL approach is to provide sources, that may be performing much better than their applicable regulatory requirement, a screening option by which they can demonstrate compliance. The approach uses less precise methods and avoids additional test runs which might otherwise be needed to meet the specific DQO criterion while still being assured of correctly demonstrating compliance. It is designed to reduce “false positive” or so called “Type II errors” which may erroneously indicate compliance where more variable test methods are employed. Because it encourages CE performance greater than that required in exchange for reduced compliance demonstration burden, the sources that successfully use the LCL approach could produce emission reductions beyond allowable emissions. Thus, it could provide additional benefits to the environment as well.

4.2 The LCL approach compares the 80 percent (two-sided) LCL for the mean measured CE value to the applicable CE regulatory requirement. In addition to the general criteria described in section 2, the specific LCL criteria are that either the LCL be greater than or equal to the applicable CE regulatory requirement or that the specific DQO criterion is met. A more detailed description of the LCL approach follows:

4.3 A source conducts an initial series of at least three runs. The owner or operator may choose to conduct additional test runs during the initial test if desired.

4.4 If all of the general criteria are met and the specific DQO criterion is met, then the average CE value is used to determine compliance.

4.5 If the data meet all of the general criteria, but do not meet the specific DQO criterion; and the average CE, using all valid test runs, is above 100 percent then the test sequence cannot be used to calculate the LCL. At this point the facility has the option of (a) conducting more test runs in hopes of meeting the DQO or of bringing the average CE for all test runs below 100 percent so the LCL can be used or (b) discarding all previous test data and retesting.

4.6 The purpose of the requirement in Section 4.5 is to protect against protocols and test methods which may be inherently biased high. This is important because it is impossible to have an actual CE greater than 100 percent and the LCL approach only looks at the lower end variability of the test results. This is different from the DQO which allows average CE values up to 105 percent because the DQO sets both upper and lower limits on test variability.

4.7 If at any point during testing the results meet the DQO, the average CE can be used for demonstrating compliance with the applicable regulatory requirement. Similarly, if the average CE is below 100 percent then the LCL can be used for demonstrating compliance with the applicable regulatory requirement without regard to the DQO.

4.8 The LCL is calculated at a 80 percent (two-sided) confidence level as follows using Equation 11:

$$LC_1 = x_{avg} - \frac{t_{0.90}s}{\sqrt{n}} \quad \text{Eq 11}$$

Where:

LC_1 =LCL at a 80 percent (two-sided) confidence level.

n =number of valid test runs.

s =sample standard deviation.

$t_{0.90}$ =t-value at the 80-percent (two-sided) confidence level (see Table 3-1).

x_{avg} =average measured CE value (calculated from all valid test runs).

4.9 The resulting LC_1 is compared to the applicable CE regulatory requirement. If LC_1 exceeds (i.e., is higher than) the applicable regulatory requirement, then a facility is in initial compliance. However, if the LC_1 is below the CE requirement, then the facility must conduct additional test runs. After this point the test results will be evaluated not only looking at the LCL, but also the DQO of ± 5 percent of the mean at a 95 percent confidence level. If the test results with the additional test runs meet the DQO before the LCL exceeds the applicable CE regulatory requirement, then the average CE value will be compared to the applicable CE regulatory requirement for determination of compliance.

4.10 If there is no specific CE requirement in the applicable regulation, then the applicable CE regulatory requirement is determined based on the applicable regulation and an acceptable destruction efficiency test. If the applicable regulation requires daily compliance and the latest CE compliance demonstration was made using the LCL approach, then the calculated LC_1 will be the highest CE value which a facility is allowed to claim until another CE demonstration test is conducted. This last requirement is necessary to assure both sufficiently reliable test results in all circumstances and the potential environmental benefits referenced above.

4.11 An example of calculating the LCL is shown below. Facility B's applicable regulatory requirement is 85 percent CE. Facility B conducted a CE test using a traditional liquid/gas mass balance and submitted the following results and the calculation shown in Equation 12:

Run	CE
1	94.2
2	97.6
3	90.5

Therefore:

$n=3$

$t_{0.90}=1.886$

$x_{avg}=94.1$

$s=3.55$

$$LC_1 = 94.1 - \frac{(1.886)(3.55)}{\sqrt{3}} = 90.23 \quad \text{Eq 12}$$

4.12 Since the LC_1 of 90.23 percent is above the applicable regulatory requirement of 85 percent then the facility is in compliance. The facility must continue to accept the LC_1 of 90.23 percent as its CE value until a new series of valid tests is conducted. (The data generated by Facility B do not meet the specific DQO criterion.)

5. Recommended Reporting for Alternative CE Protocols

5.1 If a facility chooses to use alternative CE protocols and test methods that satisfy either the DQO or LCL and the additional criteria in section 4., the following information should be submitted with each test report to the appropriate regulatory agency:

1. A copy of all alternative test methods, including any changes to the EPA reference methods, QA/QC procedures and calibration procedures.
2. A table with information on each liquid sample, including the sample identification, where and when the sample was taken, and the VOC content of the sample;
3. The coating usage for each test run (for protocols in which the liquid VOC input is to be determined);
4. The quantity of captured VOC measured for each test run;
5. The CE calculations and results for each test run;
6. The DQO or LCL calculations and results; and
7. The QA/QC results, including information on calibrations (e.g., how often the instruments were calibrated, the calibration results, and information on calibration gases, if applicable).

6. Recommended Recordkeeping for Alternative CE Protocols.

6.1 A record should be kept at the facility of all raw data recorded during the test in a suitable form for submittal to the appropriate regulatory authority upon request.

Subpart LL—National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants

AUTHORITY: 62 FR 52407, Oct. 7, 1997, unless otherwise noted.

§ 63.840 Applicability.

(a) Except as provided in paragraph (b) of this section, the requirements of this subpart apply to the owner or operator of each new pitch storage tank and new or existing potline, paste production plant, or anode bake furnace associated with primary aluminum

production and located at a major source as defined in § 63.2.

(b) The requirements of this subpart do not apply to any existing anode bake furnace that is not located on the same site as a primary aluminum reduction plant. The owner or operator shall comply with the State MACT determination established by the applicable regulatory authority.

(c) An owner or operator of an affected facility (potroom group or anode bake furnace) under § 60.190 of this chapter may elect to comply with either the requirements of § 63.845 of this subpart or the requirements of subpart S of part 60 of this chapter.

§ 63.841 Incorporation by reference.

(a) The following material is incorporated by reference in the corresponding sections noted. This incorporation by reference was approved by the Director of the Federal Register on October 7, 1997, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of approval, and notice of any change in the materials will be published in the FEDERAL REGISTER. Revisions to "Industrial Ventilation: A Manual of Recommended Practice" (22nd ed.) are applicable only after publication of a document in the FEDERAL REGISTER to amend subpart LL to require use of the new information.

(1) Chapter 3, "Local Exhaust Hoods" and Chapter 5, "Exhaust System Design Procedure" of "Industrial Ventilation: A Manual of Recommended Practice," American Conference of Governmental Industrial Hygienists, 22nd edition, 1995, IBR approved for §§ 63.843(b) and 63.844(b); and

(2) ASTM D 2986-95A, Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test, IBR approved for section 7.1.1 of Method 315 in appendix A to this part.

(b) The materials incorporated by reference are available for inspection at the Office of the Federal Register, 800 North Capitol Street NW., Suite 700, 7th Floor, Washington, DC, and at the Air and Radiation Docket Center,

U.S. EPA, 401 M Street, SW., Washington, DC. The materials also are available for purchase from one of the following addresses:

(1) Customer Service Department, American Conference of Governmental Industrial Hygienists (ACGIH), 1330 Kemper Meadow Drive, Cincinnati, Ohio 45240, telephone number (513) 742-2020; or

(2) American Society for Testing and Materials, 100 Bar Harbour Drive, West Conshohocken, Pennsylvania 19428, telephone number (610) 832-9500.

§ 63.842 Definitions.

Terms used in this subpart are defined in the Clean Air Act as amended (the Act), in § 63.2, or in this section as follows:

Anode bake furnace means an oven in which the formed green anodes are baked for use in a prebake process. This definition includes multiple anode bake furnaces controlled by a common control device (bake furnaces controlled by a common control device are considered to be one source).

Center-worked prebake (CWPB) process means a method of primary aluminum reduction using the prebake process in which the alumina feed is added down the center of the reduction cell.

Center-worked prebake one (CWPB1) means all existing center-worked prebake potlines not defined as center-worked prebake two (CWPB2) or center-worked prebake three (CWPB3) potlines.

Center-worked prebake two (CWPB2) means all existing center-worked prebake potlines located at Alcoa in Rockdale, Texas; Kaiser Aluminum in Mead, Washington; Ormet Corporation in Hannibal, Ohio; Ravenswood Aluminum in Ravenswood, West Virginia; Reynolds Metals in Troutdale, Oregon; and Vanalco Aluminum in Vancouver, Washington.

Center-worked prebake three (CWPB3) means all existing center-worked prebake potlines that produce very high purity aluminum, have a wet scrubber for the primary control system, and are located at the NSA primary aluminum plant in Hawesville, Kentucky.

Continuous parameter monitoring system means the total equipment that

may be required to meet the data acquisition and availability requirements of this subpart, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

Horizontal stud Soderberg (HSS) process means a method of primary aluminum reduction using the Soderberg process in which the electrical current is introduced to the anode by steel rods (studs) inserted into the side of a monolithic anode.

Modified potroom group means an existing potroom group to which any physical change in, or change in the method of operation of, results in an increase in the amount of total fluoride emitted into the atmosphere by that potroom group.

Paste production plant means the processes whereby calcined petroleum coke, coal tar pitch (hard or liquid), and/or other materials are mixed, transferred, and formed into briquettes or paste for vertical stud Soderberg (VSS) and HSS processes or into green anodes for a prebake process. This definition includes all operations from initial mixing to final forming (i.e., briquettes, paste, green anodes) within the paste plant, including conveyors and units managing heated liquid pitch.

Pitch storage tank means any fixed roof tank that is used to store liquid pitch that is not part of the paste production plant.

Polycyclic organic matter (POM) means organic matter extractable by methylene chloride as determined by Method 315 in appendix A to this part or by an approved alternative method.

Potline means a single, discrete group of electrolytic reduction cells electrically connected in series, in which alumina is reduced to form aluminum.

Potroom means a building unit that houses a group of electrolytic cells in which aluminum is produced.

Potroom group means an uncontrolled potroom, a potroom that is controlled individually, or a group of potrooms or potroom segments ducted to a common control system.

Prebake process means a method of primary aluminum reduction that uses an anode that was baked in an anode bake furnace, which is introduced into

the top of the reduction cell and consumed as part of the reduction process.

Primary aluminum reduction plant means any facility manufacturing aluminum by electrolytic reduction.

Primary control system means the equipment used to capture the gases and particulate matter evacuated directly from the reduction cell and the emission control device(s) used to remove pollutants prior to discharge of the cleaned gas to the atmosphere. A roof scrubber is not part of the primary control system.

Primary emissions means the emissions discharged from the primary control system.

Reconstructed potroom group means an existing potroom group for which the components are replaced to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new potroom group, and for which it is technologically and economically feasible to meet the applicable emission limits for total fluoride set forth in this subpart.

Reconstruction means the replacement of components of a source to such an extent that:

(1) All of the major components of the source are replaced (for example, the major components of a potline include the raw material handling system, reduction cells, superstructure, hooding, ductwork, etc.); and

(2) It is technologically and economically feasible for the reconstructed source to meet the standards for new sources established in this subpart.

Roof monitor means that portion of the roof of a potroom building where gases not captured at the cell exit from the potroom.

Secondary emissions means the fugitive emissions that are not captured and controlled by the primary control system and that escape through the roof monitor or through roof scrubbers.

Side-worked prebake (SWPB) process means a method of primary aluminum reduction using the prebake process, in which the alumina is added along the sides of the reduction cell.

Soderberg process means a method of primary aluminum reduction in which the anode paste mixture is baked in the

reduction pot by the heat resulting from the electrolytic process.

Total fluorides (TF) means elemental fluorine and all fluoride compounds as measured by Methods 13A or 13B in appendix A to part 60 of this chapter or by an approved alternative method.

Vertical stud Soderberg (VSS) process means a method of primary aluminum reduction using the Soderberg process, in which the electrical current is introduced to the anode by steel rods (studs) inserted into the top of a monolithic anode.

Vertical stud Soderberg one (VSS1) means all existing vertical stud Soderberg potlines located either at Northwest Aluminum in The Dalles, Oregon, or at Goldendale Aluminum in Goldendale, Washington.

Vertical stud Soderberg two (VSS2) means all existing vertical stud Soderberg potlines located at Columbia Falls Aluminum in Columbia Falls, Montana.

§ 63.843 Emission limits for existing sources.

(a) *Potlines.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the applicable limits in paragraphs (a)(1) and (a)(2) of this section.

(1) *TF limits.* Emissions of TF shall not exceed:

(i) 0.95 kg/Mg (1.9 lb/ton) of aluminum produced for each CWPB1 potline;

(ii) 1.5 kg/Mg (3.0 lb/ton) of aluminum produced for each CWPB2 potline;

(iii) 1.25 kg/Mg (2.5 lb/ton) of aluminum produced for each CWPB3 potline;

(iv) 0.8 kg/Mg (1.6 lb/ton) of aluminum produced for each SWPB potline;

(v) 1.1 kg/Mg (2.2 lb/ton) of aluminum produced for each VSS1 potline;

(vi) 1.35 kg/Mg (2.7 lb/ton) of aluminum produced for each VSS2 potline; and

(vii) 1.35 kg/Mg (2.7 lb/ton) of aluminum produced for each HSS potline.

(2) *POM limits.* Emissions of POM shall not exceed:

(i) 2.35 kg/Mg (4.7 lb/ton) of aluminum produced for each HSS potline;

(ii) 1.2 kg/Mg (2.4 lb/ton) of aluminum produced for each VSS1 potline; and

(iii) 1.8 kg/Mg (3.6 lb/ton) of aluminum produced for each VSS2 potline.

(3) *Change in subcategory.* Any potline, other than a reconstructed potline, that is changed such that its applicable subcategory also changes shall meet the applicable emission limit in this subpart for the original subcategory or the new subcategory, whichever is more stringent.

(b) *Paste production plants.* The owner or operator shall install, operate, and maintain equipment to capture and control POM emissions from each paste production plant.

(1) The emission capture system shall be installed and operated to meet the generally accepted engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in Chapters 3 and 5 of "Industrial Ventilation: A Handbook of Recommended Practice" (incorporated by reference in § 63.841 of this part); and

(2) Captured emissions shall be routed through a closed system to a dry coke scrubber; or

(3) The owner or operator may submit a written request for use of an alternative control device to the applicable regulatory authority for review and approval. The request shall contain information and data demonstrating that the alternative control device achieves POM emissions less than 0.011 lb/ton of paste for plants with continuous mixers or POM emissions less than 0.024 lb/ton of paste for plants with batch mixers. The POM emission rate shall be determined by sampling using Method 315 in appendix A to this part.

(c) *Anode bake furnaces.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the limits in paragraphs (c)(1) and (c)(2) of this section.

(1) *TF limit.* Emissions of TF shall not exceed 0.10 kg/Mg (0.20 lb/ton) of green anode; and

(2) *POM limit.* Emissions of POM shall not exceed 0.09 kg/Mg (0.18 lb/ton) of green anode.

§ 63.844 Emission limits for new or reconstructed sources.

(a) *Potlines.* The owner or operator shall not discharge or cause to be dis-

charged into the atmosphere any emissions of TF or POM in excess of the limits in paragraphs (a)(1) and (a)(2) of this section.

(1) *TF limit.* Emissions of TF shall not exceed 0.6 kg/Mg (1.2 lb/ton) of aluminum produced; and

(2) *POM limit.* Emissions of POM from Soderberg potlines shall not exceed 0.32 kg/Mg (0.63 lb/ton) of aluminum produced.

(b) *Paste production plants.* The owner or operator shall meet the requirements in § 63.843(b) for existing paste production plants.

(c) *Anode bake furnaces.* The owner or operator shall not discharge or cause to be discharged into the atmosphere any emissions of TF or POM in excess of the limits in paragraphs (c)(1) and (c)(2) of this section.

(1) *TF limit.* Emissions of TF shall not exceed 0.01 kg/Mg (0.02 lb/ton) of green anode; and

(2) *POM limit.* Emissions of POM shall not exceed 0.025 kg/Mg (0.05 lb/ton) of green anode.

(d) *Pitch storage tanks.* Each pitch storage tank shall be equipped with an emission control system designed and operated to reduce inlet emissions of POM by 95 percent or greater.

§ 63.845 Incorporation of new source performance standards for potroom groups.

(a) *Applicability.* The provisions in paragraphs (a) through (i) of this section shall apply to any Soderberg, CWPB2, and CWPB3 potline that adds a new potroom group to an existing potline or that is associated with a potroom group that meets the definition of "modified potroom group" or "reconstructed potroom group."

(1) The following shall not, by themselves, be considered to result in a potroom group modification:

(i) Maintenance, repair, and replacement that the applicable regulatory authority determines to be routine for the potroom group;

(ii) An increase in production rate of an existing potroom group, if that increase can be accomplished without a capital expenditure on that potroom group;

(iii) An increase in the hours of operation;

(iv) Use of an alternative fuel or raw material if, prior to the effective date of this subpart, the existing potroom group was designed to accommodate that alternative use;

(v) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system that the applicable regulatory authority determines to be less environmentally beneficial; and

(vi) The relocation or change in ownership of an existing potroom group.

(2) The provisions in paragraphs (a)(2)(i) through (a)(2)(iv) of this section apply when the applicable regulatory authority must determine if a potroom group meets the definition of reconstructed potroom group.

(i) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(ii) If an owner or operator of an existing potroom group proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new potroom group, he/she shall notify the applicable regulatory authority of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(A) Name and address of the owner or operator;

(B) The location of the existing potroom group;

(C) A brief description of the existing potroom group and the components that are to be replaced;

(D) A description of the existing air pollution control equipment and the proposed air pollution control equipment;

(E) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new potroom group;

(F) The estimated life of the existing potroom group after the replacements; and

(G) A discussion of any economic or technical limitations the potroom group may have in complying with the

applicable standards of performance after the proposed replacements.

(iii) The applicable regulatory authority will determine, within 30 days of the receipt of the notice required by paragraph (a)(2)(ii) of this section and any additional information he/she may reasonably require, whether the proposed replacement constitutes a reconstructed potroom group.

(iv) The applicable regulatory authority's determination under paragraph (a)(2)(iii) of this section shall be based on:

(A) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new potroom group;

(B) The estimated life of the potroom group after the replacements compared to the life of a comparable entirely new potroom group;

(C) The extent to which the components being replaced cause or contribute to the emissions from the potroom group; and

(D) Any economic or technical limitations on compliance with applicable standards of performance that are inherent in the proposed replacements.

(b) *Lower TF emission limit.* The owner or operator shall calculate a lower TF emission limit for any potline associated with the modified potroom group, reconstructed potroom group, or new potroom group using the following equation:

$$L_1 = f_1 \times L_{PG1} + (1 - f_1) \times L_{PL}$$

Where

L_1 = the lower TF emission limit in kg/Mg (lb/ton);

f_1 = the fraction of the potline's total aluminum production capacity that is contained within all modified potroom groups, reconstructed potroom groups, and new potroom groups;

L_{PG1} = 0.95 kg/Mg (1.9 lb/ton) for prebake potlines and 1.0 kg/Mg (2.0 lb/ton) for Soderberg potlines; and

L_{PL} = the TF emission limit from § 63.843(a)(1) for the appropriate potline subcategory that would have otherwise applied to the potline.

(c) *Upper TF emission limit.* The owner or operator shall calculate an upper TF

emission limit for any potline associated with the modified potroom group, reconstructed potroom group, or new potroom group using the following equation:

$$L_2 = f_1 \times L_{PG2} + (1 - f_1) \times L_{PL}$$

Where

L_2 = the upper TF emission limit in kg/Mg (lb/ton); and

L_{PG2} = 1.25 kg/Mg (2.5 lb/ton) for prebake potlines and 1.3 kg/Mg (2.6 lb/ton) for Soderberg potlines.

(d) *Recalculation.* The TF emission limits in paragraphs (b) and (c) of this section shall be recalculated each time a new potroom group is added to the potline and each time an additional potroom group meets the definition of "modified potroom group" or "reconstructed potroom group."

(e) *Emission limitation.* The owner or operator shall not discharge or cause to be discharged into the atmosphere emissions of TF from any potline associated with the modified potroom group, reconstructed potroom group, or new potroom group that exceed the lower emission limit calculated in paragraph (b) of this section, except that emissions less than the upper limit calculated in paragraph (c) of this section will be considered in compliance if the owner or operator demonstrates that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the potline during the performance test.

(f) *Report.* Within 30 days of any performance test that reveals emissions that fall between the lower limit calculated in paragraph (b) of this section and the upper limit calculated in paragraph (c) of this section, the owner or operator shall submit to the applicable regulatory authority a report indicating whether all necessary control devices were online and operating properly during the performance test, describing the operating and maintenance procedures followed, and setting forth any explanation for the excess emissions.

(g) *Procedures to determine TF emissions.* The owner or operator shall determine TF emissions for the potline using the following procedures:

(1) Determine the emission rate of TF in kg/Mg (lb/ton) from sampling secondary emissions and the primary control system for all new potroom groups, modified potroom groups, and reconstructed potroom groups using the procedures, equations, and test methods in §§ 63.847, 63.848, and 63.849.

(2) Determine the emission rate of TF in kg/Mg (lb/ton) from sampling secondary emissions and the primary control system for potroom groups or sections of potroom groups within the potline that are not new potroom groups, modified potroom groups, or reconstructed potroom groups according to paragraphs (g)(2)(i) or (g)(2)(ii) of this section.

(i) Determine the mass emission rate of TF in kg/Mg (lb/ton) from at least one potroom group within the potline that is not a new potroom group, modified potroom group, or reconstructed potroom group using the procedures, equations, and test methods in §§ 63.847, 63.848, and 63.849, or

(ii) Use the results of the testing required by paragraph (g)(1) of this section to represent the entire potline based on a demonstration that the results are representative of the entire potline. Representativeness shall be based on showing that all of the potroom groups associated with the potline are substantially equivalent in terms of their structure, operability, type of emissions, volume of emissions, and concentration of emissions.

(3) Calculate the TF emissions for the potline in kg/Mg (lb/ton) based on the production-weighted average of the TF emission rates from paragraphs (g)(1) and (g)(2) of this section using the following equation:

$$E = f_1 \times E_{PG1} + (1 - f_1) \times E_{PL}$$

where

E = the TF emission rate for the entire potline, kg/Mg (lb/ton);

f_1 = the fraction of the potline's total aluminum production rate that is contained within all modified potroom groups, reconstructed potroom groups, and new potroom groups;

E_{PG1} = the TF emission rate from paragraph (g)(1) of this section for all modified potroom groups, reconstructed potroom groups, and new potroom groups, kg/Mg (lb/ton); and

E_{PL} = the TF emission rate for the balance of the potline from paragraph (g)(2) of this section, kg/Mg (lb/ton).

Compliance is demonstrated when TF emissions for the potline meet the requirements in paragraph (e) of this section.

(4) As an alternative to sampling as required in paragraphs (g)(1) and (g)(2) of this section, the owner or operator may perform representative sampling of the entire potline subject to the approval of the applicable regulatory authority. Such sampling shall provide coverage by the sampling equipment of both the new, modified, or reconstructed potroom group and the balance of the potline. The coverage for the new, modified, or reconstructed potroom group must meet the criteria specified in the reference methods in § 63.849. TF emissions shall be determined for the potline using the procedures, equations, and test methods in §§ 63.847, 63.848, and 63.849. Compliance is demonstrated when TF emissions for the potline meet the requirements in paragraph (e) of this section.

(h) *Opacity*. Except as provided in paragraph (i) of this section, the owner or operator shall not discharge or cause to be discharged into the atmosphere from the modified potroom group, reconstructed potroom group, or new potroom group any emissions of gases that exhibit 10 percent opacity or greater.

(i) *Alternative opacity limit*. An alternative opacity limit may be established in place of the opacity limit in paragraph (h) of this section using the following procedures:

(1) If the regulatory authority finds that a potline is in compliance with the applicable TF standard for which performance tests are conducted in accordance with the methods and procedures in § 63.849 but during the time such performance tests are being conducted fails to meet any applicable opacity standard, the regulatory authority shall notify and advise the owner or operator that he/she may petition the regulatory authority within 10 days of receipt of notification to make appropriate adjustment to the opacity standard.

(2) The regulatory authority will grant such a petition upon a dem-

onstration by the owner or operator that the potroom group and associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the regulatory authority; and that the potroom group and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(3) As indicated by the performance and opacity tests, the regulatory authority will establish an opacity standard for any potroom group meeting the requirements in paragraphs (i)(1) and (i)(2) of this section such that the opacity standard could be met by the potroom group at all times during which the potline is meeting the TF emission limit.

(4) The alternative opacity limit established in paragraph (i)(3) of this section shall not be greater than 20 percent opacity.

§ 63.846 Emission averaging.

(a) *General*. The owner or operator of an existing potline or anode bake furnace in a State that does not choose to exclude emission averaging in the approved operating permit program may demonstrate compliance by emission averaging according to the procedures in this section.

(b) *Potlines*. The owner or operator may average TF emissions from potlines and demonstrate compliance with the limits in Table 1 of this subpart using the procedures in paragraphs (b)(1) and (b)(2) of this section. The owner or operator also may average POM emissions from potlines and demonstrate compliance with the limits in Table 2 of this subpart using the procedures in paragraphs (b)(1) and (b)(3) of this section.

(1) Monthly average emissions of TF and/or quarterly average emissions of POM shall not exceed the applicable emission limit in Table 1 of this subpart (for TF emissions) and/or Table 2 of this subpart (for POM emissions). The emission rate shall be calculated based on the total emissions from all potlines over the period divided by the quantity of aluminum produced during

the period, from all potlines comprising the averaging group.

(2) To determine compliance with the applicable emission limit in Table 1 of this subpart for TF emissions, the owner or operator shall determine the monthly average emissions (in lb/ton) from each potline from at least three runs per potline each month for TF secondary emissions using the procedures and methods in §§63.847 and 63.849. The owner or operator shall combine the results of secondary TF monthly average emissions with the TF results for the primary control system and divide total emissions by total aluminum production.

(3) To determine compliance with the applicable emission limit in Table 2 of this subpart for POM emissions, the owner or operator shall determine the quarterly average emissions (in lb/ton) from each potline from at least one run each month for POM emissions using the procedures and methods in §§63.847 and 63.849. The owner or operator shall combine the results of secondary POM quarterly average emissions with the POM results for the primary control system and divide total emissions by total aluminum production.

(c) *Anode bake furnaces.* The owner or operator may average TF emissions from anode bake furnaces and demonstrate compliance with the limits in Table 3 of this subpart using the procedures in paragraphs (c)(1) and (c)(2) of this section. The owner or operator also may average POM emissions from anode bake furnaces and demonstrate compliance with the limits in Table 3 of this subpart using the procedures in paragraphs (c)(1) and (c)(2) of this section.

(1) Annual emissions of TF and/or POM from a given number of anode bake furnaces making up each averaging group shall not exceed the applicable emission limit in Table 3 of this subpart in any one year; and

(2) To determine compliance with the applicable emission limit in Table 3 of this subpart for anode bake furnaces, the owner or operator shall determine TF and/or POM emissions from the control device for each furnace at least once a year using the procedures and methods in §§63.847 and 63.849.

(d) *Implementation plan.* The owner or operator shall develop and submit an implementation plan for emission averaging to the applicable regulatory authority for review and approval according to the following procedures and requirements:

(1) *Deadlines.* The owner or operator must submit the implementation plan no later than 6 months before the date that the facility intends to comply with the emission averaging limits.

(2) *Contents.* The owner or operator shall include the following information in the implementation plan or in the application for an operating permit for all emission sources to be included in an emissions average:

(i) The identification of all emission sources (potlines or anode bake furnaces) in the average;

(ii) The assigned TF or POM emission limit for each averaging group of potlines or anode bake furnaces;

(iii) The specific control technology or pollution prevention measure to be used for each emission source in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple sources, the owner or operator must identify each source;

(iv) The test plan for the measurement of TF or POM emissions in accordance with the requirements in §63.847(b);

(v) The operating parameters to be monitored for each control system or device and a description of how the operating limits will be determined;

(vi) If the owner or operator requests to monitor an alternative operating parameter pursuant to §63.848(l):

(A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and

(B) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the applicable regulatory authority, that the proposed monitoring frequency is sufficient to

represent control device operating conditions; and

(vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating conditions.

(3) *Approval criteria.* Upon receipt, the regulatory authority shall review and approve or disapprove the plan or permit application according to the following criteria:

(i) Whether the content of the plan includes all of the information specified in paragraph (d)(2) of this section; and

(ii) Whether the plan or permit application presents sufficient information to determine that compliance will be achieved and maintained.

(4) *Prohibitions.* The applicable regulatory authority shall not approve an implementation plan or permit application containing any of the following provisions:

(i) Any averaging between emissions of differing pollutants or between differing sources. Emission averaging shall not be allowed between TF and POM, and emission averaging shall not be allowed between potlines and bake furnaces;

(ii) The inclusion of any emission source other than an existing potline or existing anode bake furnace or the inclusion of any potline or anode bake plant not subject to the same operating permit;

(iii) The inclusion of any potline or anode bake furnace while it is shut down; or

(iv) The inclusion of any periods of startup, shutdown, or malfunction, as described in the startup, shutdown, and malfunction plan required by § 63.850(c), in the emission calculations.

(5) *Term.* Following review, the applicable regulatory authority shall approve the plan or permit application, request changes, or request additional information. Once the applicable regulatory authority receives any additional information requested, the applicable regulatory authority shall approve or disapprove the plan or permit application within 120 days.

(i) The applicable regulatory authority shall approve the plan for the term of the operating permit;

(ii) To revise the plan prior to the end of the permit term, the owner or operator shall submit a request to the applicable regulatory authority; and

(iii) The owner or operator may submit a request to the applicable regulatory authority to implement emission averaging after the applicable compliance date.

(6) *Operation.* While operating under an approved implementation plan, the owner or operator shall monitor the operating parameters of each control system, keep records, and submit periodic reports as required for each source subject to this subpart.

§ 63.847 Compliance provisions.

(a) *Compliance dates.* The owner or operator of a primary aluminum plant shall demonstrate initial compliance with the requirements of this subpart by:

(1) October 7, 1999, for an owner or operator of an existing plant or source;

(2) October 9, 2000, for an existing source, provided the owner or operator demonstrates to the satisfaction of the applicable regulatory authority that additional time is needed to install or modify the emission control equipment;

(3) October 8, 2001, for an existing source that is granted an extension by the regulatory authority under section 112(i)(3)(B) of the Act; or

(4) Upon startup, for an owner or operator of a new or reconstructed source.

(b) *Test plan.* The owner or operator shall prepare a site-specific test plan prior to the initial performance test according to the requirements of § 63.7(c) of this part. The test plan must include procedures for conducting the initial performance test and for subsequent performance tests required in § 63.848 for emission monitoring. In addition to the information required by § 63.7, the test plan shall include:

(1) Procedures to ensure a minimum of three runs are performed annually for the primary control system for each source;

(2) For a source with a single control device exhausted through multiple stacks, procedures to ensure that at least three runs are performed annually by a representative sample of the

stacks satisfactory to the applicable regulatory authority;

(3) For multiple control devices on a single source, procedures to ensure that at least one run is performed annually for each control device by a representative sample of the stacks satisfactory to the applicable regulatory authority;

(4) Procedures for sampling single stacks associated with multiple anode bake furnaces;

(5) For plants with roof scrubbers, procedures for rotating sampling among the scrubbers or other procedures to obtain representative samples as approved by the applicable regulatory authority;

(6) For a VSS1 potline, procedures to ensure that one fan (or one scrubber) per potline is sampled for each run;

(7) For a SWPB potline, procedures to ensure that the average of the sampling results for two fans (or two scrubbers) per potline is used for each run; and

(8) Procedures for establishing the frequency of testing to ensure that at least one run is performed before the 15th of the month, at least one run is performed after the 15th of the month, and that there are at least 6 days between two of the runs during the month, or that secondary emissions are measured according to an alternate schedule satisfactory to the applicable regulatory authority.

(c) *Initial performance test.* Following approval of the site-specific test plan, the owner or operator shall conduct an initial performance test during the first month following the compliance date in accordance with the procedures in paragraph (d) of this section. If a performance test has been conducted on the primary control system for potlines or for the anode bake furnace within the 12 months prior to the compliance date, the results of that performance test may be used to determine initial compliance.

(d) *Performance test requirements.* The initial performance test and all subsequent performance tests shall be conducted in accordance with the requirements of the general provisions in subpart A of this part, the approved test plan, and the procedures in this section.

(1) *TF emissions from potlines.* For each potline, the owner or operator shall measure and record the emission rate of TF exiting the outlet of the primary control system for each potline and the rate of secondary emissions exiting through each roof monitor, or for a plant with roof scrubbers, exiting through the scrubbers. Using the equation in paragraph (e)(1) of this section, the owner or operator shall compute and record the average of at least three runs each month for secondary emissions and at least three runs each year for the primary control system to determine compliance with the applicable emission limit. Compliance is demonstrated when the emission rate of TF is equal to or less than the applicable emission limit in §§ 63.843, 63.844, or 63.846.

(2) *POM emissions from Soderberg potlines.* For each Soderberg (HSS, VSS1, and VSS2) potline, the owner or operator shall measure and record the emission rate of POM exiting the primary emission control system and the rate of secondary emissions exiting through each roof monitor, or for a plant with roof scrubbers, exiting through the scrubbers. Using the equation in paragraph (e)(2) of this section, the owner or operator shall compute and record the average of at least three runs each quarter (one run per month) for secondary emissions and at least three runs each year for the primary control system to determine compliance with the applicable emission limit. Compliance is demonstrated when the emission rate of POM is equal to or less than the applicable emission limit in §§ 63.843, 63.844, or 63.846.

(3) *Previous control device tests.* If the owner or operator has performed more than one test of primary emission control device(s) for a potline or for a bake furnace during the previous consecutive 12 months, the average of all runs performed in the previous 12-month period shall be used to determine the contribution from the primary emission control system.

(4) *TF and POM emissions from anode bake furnaces.* For each anode bake furnace, the owner or operator shall measure and record the emission rate of TF and POM exiting the exhaust stacks(s) of the primary emission control system

for each anode bake furnace. Using the equations in paragraphs (e)(3) and (e)(4) of this section, the owner or operator shall compute and record the average of at least three runs each year to determine compliance with the applicable emission limits for TF and POM. Compliance is demonstrated when the emission rates of TF and POM are equal to or less than the applicable TF

and POM emission limits in §§63.843, 63.844, or 63.846.

(e) *Equations.* The owner or operator shall determine compliance with the applicable TF and POM emission limits using the following equations and procedures:

(1) Compute the emission rate (E_p) of TF from each potline using Equation 1:

$$E_p = \frac{[(C_{s1} \times Q_{sd})_1 + (C_{s2} \times Q_{sd})_2]}{(P \times K)} \quad (\text{Equation 1})$$

Where

E_p =emission rate of TF from a potline, kg/Mg (lb/ton);

C_{s1} =concentration of TF from the primary control system, mg/dscm (mg/dscf);

Q_{sd} =volumetric flow rate of effluent gas corresponding to the appropriate subscript location, dscm/hr (dscf/hr);

C_{s2} =concentration of TF as measured for roof monitor emissions, mg/dscm (mg/dscf);

P =aluminum production rate, Mg/hr (ton/hr);

K =conversion factor, 10^6 mg/kg (453,600 mg/lb);

$_1$ = subscript for primary control system effluent gas; and

$_2$ = subscript for secondary control system or roof monitor effluent gas.

(2) Compute the emission rate of POM from each potline using Equation 1,

Where:

E_p = emission rate of POM from the potline, kg/mg (lb/ton); and

C_s = concentration of POM, mg/dscm (mg/dscf). POM emission data collected during the installation and startup of a cathode shall not be included in C_s .

(3) Compute the emission rate (E_b) of TF from each anode bake furnace using Equation 2,

$$E_b = \frac{(C_s \times Q_{sd})}{(P_b \times K)} \quad (\text{Equation 2})$$

Where:

E_b = emission rate of TF, kg/mg (lb/ton) of green anodes produced;

C_s = concentration of TF, mg/dscm (mg/dscf);

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr);

P_b = quantity of green anode material placed in the furnace, mg/hr (ton/hr); and

K = conversion factor, 10^6 mg/kg (453,600 mg/lb).

(4) Compute the emission rate of POM from each anode bake furnace using Equation 2,

Where:

C_s = concentration of POM, mg/dscm (mg/dscf).

(5) Determine the weight of the aluminum tapped from the potline and the weight of the green anode material placed in the anode bake furnace using the monitoring devices required in §63.848(j).

(6) Determine the aluminum production rate (P) by dividing the number of hours in the calendar month into the weight of aluminum tapped from the potline during the calendar month that includes the three runs of a performance test.

(7) Determine the rate of green anode material introduced into the furnace by dividing the number of operating hours in the calendar month into the weight of green anode material used during the calendar month in which the performance test was conducted.

(f) *Paste production plants.* Initial compliance with the standards for existing and new paste production plants in §§ 63.843(b) and 63.844(b) will be demonstrated through site inspection(s) and review of site records by the applicable regulatory authority.

(g) *Pitch storage tanks.* The owner or operator shall demonstrate initial compliance with the standard for pitch storage tanks in § 63.844(d) by preparing a design evaluation or by conducting a performance test. The owner or operator shall submit for approval by the regulatory authority the information specified in paragraph (g)(1) of this section, along with the information specified in paragraph (g)(2) of this section where a design evaluation is performed or the information specified in paragraph (g)(3) of this section where a performance test is conducted.

(1) A description of the parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed; and

(2) Where a design evaluation is performed, documentation demonstrating that the control device used achieves the required control efficiency during reasonably expected maximum filling rate. The documentation shall include a description of the gas stream that enters the control device, including flow and POM content under varying liquid level conditions, and the information specified in paragraphs (g)(2)(i) through (g)(2)(vi) of this section, as applicable.

(i) If the control device receives vapors, gases, or liquids, other than fuels, from emission points other than pitch

storage tanks, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device;

(ii) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760°C (1,400°F) is used to meet the emission reduction requirement specified in § 63.844(d), documentation that those conditions exist is sufficient to meet the requirements of § 63.844(d);

(iii) Except as provided in paragraph (g)(2)(ii) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature;

(iv) If the pitch storage tank is vented to the emission control system installed for control of emissions from the paste production plant pursuant to § 63.843(b), documentation of compliance with the requirements of § 63.843(b) is sufficient to meet the requirements of § 63.844(d);

(v) For carbon adsorbers, the design evaluation shall include the affinity of the organic vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, and if applicable, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, the pressure drop shall be included; and

(vi) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(3) If a performance test is conducted, the owner or operator shall determine the control efficiency for POM during tank loading using Method 315 in appendix A to this part. The owner or operator shall include the following information:

(i) Identification of the pitch storage tank and control device for which the

performance test will be submitted; and

(ii) Identification of the emission point(s) that share the control device with the pitch storage tank and for which the performance test will be conducted.

(h) *Selection of monitoring parameters.* The owner or operator shall determine the operating limits and monitoring frequency for each control device that is to be monitored as required in § 63.848(f).

(1) For potlines and anode bake furnaces, the owner or operator shall determine upper and/or lower operating limits, as appropriate, for each monitoring device for the emission control system from the values recorded during each of the runs performed during the initial performance test and from historical data from previous performance tests conducted by the methods specified in this subpart.

(2) For a paste production plant, the owner or operator shall specify and provide the basis or rationale for selecting parameters to be monitored and the associated operating limits for the emission control device.

(3) The owner or operator may redetermine the upper and/or lower operating limits, as appropriate, based on historical data or other information and submit an application to the applicable regulatory authority to change the applicable limit(s). The redetermined limits shall become effective upon approval by the applicable regulatory authority.

§ 63.848 Emission monitoring requirements.

(a) *TF emissions from potlines.* Using the procedures in § 63.847 and in the approved test plan, the owner or operator shall monitor emissions of TF from each potline by conducting monthly performance tests. The owner or operator shall compute and record the monthly average from at least three runs for secondary emissions and the previous 12-month average of all runs for the primary control system to determine compliance with the applicable emission limit. The owner or operator must include all valid runs in the monthly average. The duration of each

run for secondary emissions must represent a complete operating cycle.

(b) *POM emissions from Soderberg potlines.* Using the procedures in § 63.847 and in the approved test plan, the owner or operator shall monitor emissions of POM from each Soderberg (HSS, VSS1, and VSS2) potline every three months. The owner or operator shall compute and record the quarterly (3-month) average from at least one run per month for secondary emissions and the previous 12-month average of all runs for the primary control systems to determine compliance with the applicable emission limit. The owner or operator must include all valid runs in the quarterly (3-month) average. The duration of each run for secondary emissions must represent a complete operating cycle. The primary control system must be sampled over an 8-hour period, unless site-specific factors dictate an alternative sampling time subject to the approval of the regulatory authority.

(c) *TF and POM emissions from anode bake furnaces.* Using the procedures in § 63.847 and in the approved test plan, the owner or operator shall monitor TF and POM emissions from each anode bake furnace on an annual basis. The owner or operator shall compute and record the annual average of TF and POM emissions from at least three runs to determine compliance with the applicable emission limits. The owner or operator must include all valid runs in the annual average.

(d) *Similar potlines.* As an alternative to monthly monitoring of TF or POM secondary emissions from each potline using the test methods in § 63.849, the owner or operator may perform monthly monitoring of TF or POM secondary emissions from one potline using the test methods in §§ 63.849 (a) or (b) to represent the performance of similar potline(s). The similar potline(s) shall be monitored using an alternative method that meets the requirements of paragraphs (d)(1) through (d)(7) of this section. Two or more potlines are similar if the owner or operator demonstrates that their structure, operability, type of emissions, volume of emissions, and concentration of emissions are substantially equivalent.

(1) To demonstrate (to the satisfaction of the regulatory authority) that the level of emission control performance is the same or better, the owner or operator shall perform an emission test using an alternative monitoring procedure for the similar potline simultaneously with an emission test using the applicable test methods. The results of the emission test using the applicable test methods must be in compliance with the applicable emission limit for existing or new potlines in §§ 63.843 or 63.844. An alternative method:

(i) For TF emissions, must account for or include gaseous fluoride and cannot be based on measurement of particulate matter or particulate fluoride alone; and

(ii) For TF and POM emissions, must meet or exceed Method 14 criteria.

(2) An HF continuous emission monitoring system is an approved alternative for the monitoring of TF secondary emissions.

(3) An owner or operator electing to use an alternative monitoring procedure shall establish an alternative emission limit based on at least nine simultaneous runs using the applicable test methods and the alternative monitoring method. All runs must represent a full process cycle.

(4) The owner or operator shall derive an alternative emission limit for the HF continuous emission monitor or an alternative method using either of the following procedures:

(i) Use the highest value from the alternative method associated with a simultaneous run by the applicable test method that does not exceed the applicable emission limit; or

(ii) Correlate the results of the two methods (the applicable test method results and the alternative monitoring method results) and establish an emission limit for the alternative monitoring system that corresponds to the applicable emission limit.

(5) The owner or operator shall submit the results required in paragraph (d)(4) of this section and all supporting documentation to the applicable regulatory authority for review and approval.

(6) The regulatory authority shall review and approve or disapprove the re-

quest for an alternative method and alternative emission limit. The criterion for approval shall be a demonstration (to the satisfaction of the regulatory authority) that the alternative method and alternative emission limit achieve a level of emission control that is the same as or better than the level that would have otherwise been achieved by the applicable method and emission limit.

(7) If the alternative method is approved by the applicable regulatory authority, the owner or operator shall perform monthly emission monitoring using the approved alternative monitoring procedure to demonstrate compliance with the alternative emission limit for each similar potline.

(e) *Reduced sampling frequency.* The owner or operator may submit a written request to the applicable regulatory authority to establish an alternative testing requirement to reduce the sampling of secondary TF emissions from potlines from monthly to quarterly.

(1) In the request, the owner or operator shall provide information and data demonstrating, to the satisfaction of the applicable regulatory authority, that secondary emissions of TF from potlines have low variability during normal operations using the procedures in paragraphs (e)(1)(i) or (e)(1)(ii) of this section.

(i) Submit data from 24 consecutive months of sampling that show the average TF emissions are less than 60 percent of the applicable limit and that no monthly performance test in the 24 months of sampling exceeds 75 percent of the applicable limit; or

(ii) Submit data and a statistical analysis that the regulatory authority may evaluate based on the approach used in "Primary Aluminum: Statistical Analysis of Potline Fluoride Emissions and Alternative Sampling Frequency" (EPA-450-86-012, October 1986), which is available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161.

(2) An approved alternative requirement must include a test schedule and the method to be used to measure emissions for performance tests.

(3) The owner or operator of a plant that has received approval of an alternative sampling frequency under §60.194 of this chapter is deemed to have approval of the alternative sampling frequency under this subpart.

(4) If emissions in excess of the applicable TF limit occur while performing quarterly sampling approved under paragraph (e)(1)(i) of this section, the owner or operator shall return to monthly sampling for at least 12 months and may reduce to quarterly sampling when:

(i) The average of all tests performed over the most recent 24-month period does not exceed 60 percent of the applicable limit, and

(ii) No more than one monthly performance test in the most recent 24-month period exceeds 75 percent of the applicable limit.

(5) If emissions in excess of the applicable TF limit occur while performing quarterly sampling approved under paragraph (e)(1)(ii) of this section, the owner or operator shall immediately return to the monthly sampling schedule required by paragraph (a) of this section until another request for an alternative sampling frequency is approved by the applicable regulatory authority.

(f) *Monitoring parameters for emission control devices.* The owner or operator shall install, operate, calibrate, and maintain a continuous parameter monitoring system for each emission control device. The owner or operator shall submit for approval by the regulatory authority a description of the parameter(s) to be monitored, the operating limits, and the monitoring frequency to ensure that the control device is being properly operated and maintained. An explanation of the criteria used for selection of the parameter(s), the operating limits, and the monitoring frequency, including how these relate to emission control also shall be submitted to the regulatory authority. Except as provided in paragraph (l) of this section, the following monitoring devices shall be installed:

(1) For dry alumina scrubbers, devices for the measurement of alumina flow and air flow;

(2) For dry coke scrubbers, devices for the measurement of coke flow and air flow;

(3) For wet scrubbers as the primary control system, devices for the measurement of water flow and air flow;

(4) For electrostatic precipitators, devices for the measurement of voltage and secondary current; and

(5) For wet roof scrubbers for secondary emission control:

(i) A device for the measurement of total water flow; and

(ii) The owner or operator shall inspect each control device at least once each operating day to ensure the control device is operating properly and record the results of each inspection.

(g) *Visible emissions.* The owner or operator shall visually inspect the exhaust stack(s) of each control device on a daily basis for evidence of any visible emissions indicating abnormal operation.

(h) *Corrective action.* If a monitoring device for a primary control device measures an operating parameter outside the limit(s) established pursuant to §63.847(h), if visible emissions indicating abnormal operation are observed from the exhaust stack of a control device during a daily inspection, or if a problem is detected during the daily inspection of a wet roof scrubber for potline secondary emission control, the owner or operator shall initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan within 1 hour. Failure to initiate the corrective action procedures within 1 hour or to take the necessary corrective actions to remedy the problem is a violation.

(i) *Exceedances.* If the limit for a given operating parameter associated with monitoring a specific control device is exceeded six times in any semi-annual reporting period, then any subsequent exceedance in that reporting period is a violation. For the purpose of determining the number of exceedances, no more than one exceedance shall be attributed in any given 24-hour period.

(j) *Weight of aluminum and green anodes.* The owner or operator of a new or existing potline or anode bake furnace shall install, operate, and maintain a monitoring device to determine the

daily weight of aluminum produced and the weight of green anode material placed in the anode bake furnace. The weight of green anode material may be determined by monitoring the weight of all anodes or by monitoring the number of anodes placed in the furnace and determining an average weight from measurements of a representative sample of anodes.

(k) *Accuracy and calibration.* The owner or operator shall submit recommended accuracy requirements to the regulatory authority for review and approval. All monitoring devices required by this section must be certified by the owner or operator to meet the accuracy requirements and must be calibrated in accordance with the manufacturer's instructions.

(l) *Alternative operating parameters.* The owner or operator may monitor alternative control device operating parameters subject to prior written approval by the applicable regulatory authority.

(m) *Other control systems.* An owner or operator using a control system not identified in this section shall request that the applicable regulatory authority include the recommended parameters for monitoring in the facility's part 70 permit.

§ 63.849 Test methods and procedures.

(a) The owner or operator shall use the following reference methods to determine compliance with the applicable emission limits for TF and POM emissions:

(1) Method 1 in appendix A to part 60 of this chapter for sample and velocity traverses;

(2) Method 2 in appendix A to part 60 of this chapter for velocity and volumetric flow rate;

(3) Method 3 in appendix A to part 60 of this chapter for gas analysis;

(4) Method 13A or Method 13B in appendix A to part 60 of this chapter, or an approved alternative, for the concentration of TF where stack or duct emissions are sampled;

(5) Method 13A or Method 13B and Method 14 or Method 14A in appendix A to part 60 of this chapter or an approved alternative method for the concentration of TF where emissions are

sampled from roof monitors not employing wet roof scrubbers;

(6) Method 315 in appendix A to this part or an approved alternative method for the concentration of POM where stack or duct emissions are sampled; and

(7) Method 315 in appendix A to this part and Method 14 in appendix A to part 60 of this chapter or an approved alternative method for the concentration of POM where emissions are sampled from roof monitors not employing wet roof scrubbers.

(b) The owner or operator of a VSS potline or a SWPB potline equipped with wet roof scrubbers for the control of secondary emissions shall use methods that meet the intent of the sampling requirements of Method 14 in appendix A to part 60 of this chapter and that are approved by the State. Sample analysis shall be performed using Method 13A or Method 13B in appendix A to part 60 of this chapter for TF, Method 315 in appendix A to this part for POM, or an approved alternative method.

(c) Except as provided in § 63.845(g)(1), references to "potroom" or "potroom group" in Method 14 in appendix A to part 60 of this chapter shall be interpreted as "potline" for the purposes of this subpart.

(d) For sampling using Method 14 in appendix A to part 60 of this chapter, the owner or operator shall install one Method 14 manifold per potline in a potroom that is representative of the entire potline, and this manifold shall meet the installation requirements specified in section 2.2.1 of Method 14 in appendix A to part 60 of this chapter.

(e) The owner or operator may use an alternative test method for TF or POM emissions providing:

(1) The owner or operator has already demonstrated the equivalency of the alternative method for a specific plant and has received previous approval from the Administrator or the applicable regulatory authority for TF or POM measurements using the alternative method; or

(2) The owner or operator demonstrates to the satisfaction of the applicable regulatory authority that the results from the alternative method meet the criteria specified in

§§ 63.848(d)(1) and (d)(3) through (d)(6). The results from the alternative method shall be based on simultaneous sampling using the alternative method and the following reference methods:

(i) For TF, Methods 13 and 14 or Method 14A in appendix A to part 60 of this chapter; or

(ii) For POM, Method 315 in appendix A to this part and Method 14 in appendix A to part 60 of this chapter.

§ 63.850 Notification, reporting, and recordkeeping requirements.

(a) *Notifications.* The owner or operator shall submit the following written notifications:

(1) Notification for an area source that subsequently increases its emissions such that the source is a major source subject to the standard;

(2) Notification that a source is subject to the standard, where the initial startup is before the effective date of the standard;

(3) Notification that a source is subject to the standard, where the source is new or has been reconstructed, the initial startup is after the effective date of the standard, and for which an application for approval of construction or reconstruction is not required;

(4) Notification of intention to construct a new major source or reconstruct a major source; of the date construction or reconstruction commenced; of the anticipated date of startup; of the actual date of startup, where the initial startup of a new or reconstructed source occurs after the effective date of the standard, and for which an application for approval of construction or reconstruction is required [see §§ 63.9(b)(4) and (b)(5)];

(5) Notification of initial performance test;

(6) Notification of initial compliance status;

(7) One-time notification for each affected source of the intent to use an HF continuous emission monitor; and

(8) Notification of compliance approach. The owner or operator shall develop and submit to the applicable regulatory authority, if requested, an engineering plan that describes the techniques that will be used to address the capture efficiency of the reduction cells for gaseous hazardous air pollut-

ants in compliance with the emission limits in §§ 63.843, 63.844, and 63.846.

(b) *Performance test reports.* The owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in paragraph (a)(6) of this section. Except as provided in paragraph (d) of this section, the owner or operator shall submit a summary of all subsequent performance tests to the applicable regulatory authority on an annual basis.

(c) *Startup, shutdown, and malfunction plan and reports.* The owner or operator shall develop and implement a written plan as described in § 63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and control systems used to comply with the standard. The plan does not have to be submitted with the permit application or included in the operating permit. The permitting authority may review the plan upon request. In addition to the information required in § 63.6(e)(3), the plan shall include:

(1) Procedures, including corrective actions, to be followed if a monitoring device measures an operating parameter outside the limit(s) established under § 63.847(h), if visible emissions from an exhaust stack indicating abnormal operation of a control device are observed by the owner or operator during the daily inspection required in § 63.848(g), or if a problem is detected during the daily inspection of a wet roof scrubber for potline secondary emission control required in § 63.848(f)(5)(ii); and

(2) The owner or operator shall also keep records of each event as required by § 63.10(b) and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in § 63.6(e)(3)(iv).

(d) *Excess emissions report.* As required by § 63.10(e)(3), the owner or operator shall submit a report (or a summary report) if measured emissions are in excess of the applicable standard. The report shall contain the information

specified in § 63.10(e)(3)(v) and be submitted semiannually unless quarterly reports are required as a result of excess emissions.

(e) *Recordkeeping.* The owner or operator shall maintain files of all information (including all reports and notifications) required by § 63.10(b) and by this subpart.

(1) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off-site;

(2) The owner or operator may retain records on microfilm, on a computer, on computer disks, on magnetic tape, or on microfiche;

(3) The owner or operator may report required information on paper or on a labeled computer disc using commonly available and compatible computer software; and

(4) In addition to the general records required by § 63.10(b), the owner or operator shall maintain records of the following information:

(i) Daily production rate of aluminum;

(ii) Daily production rate of green anode material placed in the anode bake furnace;

(iii) A copy of the startup, shutdown, and malfunction plan;

(iv) Records of design information for paste production plant capture systems;

(v) Records of design information for an alternative emission control device for a paste production plant;

(vi) Records supporting the monitoring of similar potlines demonstrating that the performance of similar potlines is the same as or better than that of potlines sampled by manual methods;

(vii) Records supporting a request for reduced sampling of potlines;

(viii) Records supporting the correlation of emissions measured by a continuous emission monitoring system to emissions measured by manual methods and the derivation of the alternative emission limit derived from the measurements;

(ix) The current implementation plan for emission averaging and any subsequent amendments;

(x) Records, such as a checklist or the equivalent, demonstrating that the daily inspection of a potline with wet roof scrubbers for secondary emission control has been performed as required in § 63.848(f)(5)(ii), including the results of each inspection;

(xi) Records, such as a checklist or the equivalent, demonstrating that the daily visual inspection of the exhaust stack for each control device has been performed as required in § 63.848(g), including the results of each inspection;

(xii) For a potline equipped with an HF continuous emission monitor, records of information and data required by § 63.10(c);

(xiii) Records documenting the corrective actions taken when the limit(s) for an operating parameter established under § 63.847(h) were exceeded, when visible emissions indicating abnormal operation were observed from a control device stack during a daily inspection required under § 63.848(g), or when a problem was detected during the daily inspection of a wet roof scrubber for potline secondary control required in § 63.848(f)(5)(ii);

(xiv) Records documenting any POM data that are invalidated due to the installation and startup of a cathode; and

(xv) Records documenting the portion of TF that is measured as particulate matter and the portion that is measured as gaseous when the particulate and gaseous fractions are quantified separately using an approved test method.

§ 63.851 Regulatory authority review procedures.

(a) The applicable regulatory authority shall notify the owner or operator in writing of the need for additional time to review the submissions in paragraphs (a)(1) through (a)(5) of this section or of approval or intent to deny approval of the submissions in paragraphs (a)(1) through (a)(5) of this section within 60 calendar days after receipt of sufficient information to evaluate the submission. The 60-day period begins after the owner or operator has been notified that the submission is complete.

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- (1) The test plan in § 63.847(b);
- (2) Request to change limits for operating parameters in § 63.847(h)(3);
- (3) Request for similar potline monitoring in § 63.848(d)(5);
- (4) Request for reduced sampling frequency in § 63.848(e); and
- (5) Request for an alternative method in § 63.849(e)(2).

(b) The applicable regulatory authority shall notify the owner or operator in writing whether the submission is complete within 30 calendar days of receipt of the original submission or within 30 days of receipt of any supplementary information that is submitted. When a submission is incomplete, the applicable regulatory authority shall specify the information needed to complete the submission and shall give

the owner or operator 30 calendar days after receipt of the notification to provide the information.

§ 63.852 Applicability of general provisions.

The requirements of the general provisions in subpart A of this part that are not applicable to the owner or operator subject to the requirements of this subpart are shown in appendix A of this subpart.

§ 63.853 Delegation of authority.

In delegating implementation and enforcement authority to a State under section 112(d) of the Act, all authorities are transferred to the State.

§§ 63.854–63.859 [Reserved]

TABLE 1 TO SUBPART LL—POTLINE TF LIMITS FOR EMISSION AVERAGING

Type	Monthly TF limit (lb/ton) [for given number of potlines]						
	2 lines	3 lines	4 lines	5 lines	6 lines	7 lines	8 lines
CWPB1	1.7	1.6	1.5	1.5	1.4	1.4	1.4
CWPB2	2.9	2.8	2.7	2.7	2.6	2.6	2.6
CWPB3	2.3	2.2	2.2	2.1	2.1	2.1	2.1
VSS1	2	1.9	1.8	1.7	1.7	1.7	1.7
VSS2	2.6	2.5	2.5	2.4	2.4	2.4	2.4
HSS	2.5	2.4	2.4	2.3	2.3	2.3	2.3
SWPB	1.4	1.3	1.3	1.2	1.2	1.2	1.2

TABLE 2 TO SUBPART LL—POTLINE POM LIMITS FOR EMISSION AVERAGING

Type	Quarterly POM limit (lb/ton) [for given number of potlines]						
	2 lines	3 lines	4 lines	5 lines	6 lines	7 lines	8 lines
HSS	4.1	3.8	3.7	3.5	3.5	3.4	3.3
VSS1	2.1	2.0	1.9	1.9	1.8	1.8	1.8
VSS2	3.2	3.0	2.9	2.9	2.8	2.8	2.7

TABLE 3 TO SUBPART LL—ANODE BAKE FURNACE LIMITS FOR EMISSION AVERAGING

Number of furnaces	Emission limit (lb/ton of anode)	
	TF	POM
2	0.11	0.17
3	0.090	0.17
4	0.077	0.17
5	0.070	0.17

APPENDIX A TO SUBPART LL—APPLICABILITY OF GENERAL PROVISIONS
[40 CFR part 63, subpart A to Subpart LL]

General provisions citation	Requirement	Applies to subpart LL	Comment
63.1(c)(2) .....	.....	No	All are major sources.
63.2 Definition of "reconstruction" .....	.....	No	Subpart LL defines "reconstruction."
63.6(c)(1)	Compliance date for existing sources.	No	Subpart LL specifies compliance date for existing sources.
63.6(h)	Opacity/VE standards	Only in § 63.845 ..	Opacity standards applicable only when incorporating the NSPS requirements under § 63.845.
63.8(c)(4)–(c)(8)	CMS operation and maintenance	No	Subpart LL does not require COMS/CMS or CMS performance specifications.
63.8(d)	Quality control	No	Subpart LL does not require CMS or CMS performance evaluation.
63.8(e)	Performance evaluation for CMS	No	Subpart LL specifies notification of performance tests.
63.9(e)	Notification of performance test ...	No	
63.9(f)	Notification of VE or opacity test ..	Only in § 63.845 ..	Notification is required only when incorporating the NSPS requirements under § 63.845.
63.9(g)	Additional CMS notification	No	Subpart LL specifies performance test reporting.
63.10(d)(2)	Performance test reports	No	
63.10(d)(3)	Reporting VE/opacity observations.	Only in § 63.845 ..	Reporting is required only when incorporating the NSPS requirements under § 63.845.
63.10(e)(2)	Reporting performance evaluations.	No	Subpart LL does not require performance evaluation for CMS.
63.11(a)–(b)	Control device requirements	No	Flares not applicable.

Subpart OO—National Emission Standards for Tanks—Level 1

SOURCE: 61 FR 34184, July 1, 1996, unless otherwise noted.

§ 63.900 Applicability.

The provisions of this subpart apply to the control of air emissions from tanks for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for tanks are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

§ 63.901 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in an-

other subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

Closure device means a cap, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening in a fixed roof. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

Fixed roof means a cover that is mounted on a tank in a stationary position and does not move with fluctuations in the level of the liquid managed in the tank.

No detectable organic emissions means no escape of organics to the atmosphere as determined using the procedure specified in § 63.905(a) of this subpart.

Regulated-material means the material (e.g. waste, wastewater, off-site material) required to be managed in

tanks using air emission controls in accordance with the standards specified in this subpart.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to the tank air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath the tank cover. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

Tank means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of liquids or other materials.

§ 63.902 Standards—Tank fixed roof.

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from a tank using a fixed roof.

(b) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(1) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(2) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(3) Each opening in the fixed roof shall be either:

(i) equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

(ii) connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever regulated material is managed in the tank.

(4) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability, the effects of any contact with the liquid or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(c) Whenever a regulated-material is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(1) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure

device in the closed position or re-install the cover, as applicable, to the tank.

(ii) To remove accumulated sludge or other residues from the bottom of tank.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the container internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(3) Opening of a safety device, as defined in §63.901 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the air emission control equipment in accordance with the requirements specified in §63.906(a) of this subpart.

§§63.903–63.904 [Reserved]

§63.905 Test methods and procedures.

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor

leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the tank contains a material having an organic HAP concentration representative of the range of concentrations for the regulated-materials expected to be managed in the tank. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated-material placed in the tank, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument

probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) [Reserved]

§ 63.906 Inspection and monitoring requirements.

(a) Owners and operators that use a tank equipped with a fixed roof in accordance with the provisions of § 63.902 of this subpart shall meet the following requirements:

(1) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.907 (a) of this subpart.

(b) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (b)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the

defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the regulated-material normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the regulated-material managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(c) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.907(b) of this subpart.

§ 63.907 Recordkeeping requirements.

(a) Each owner or operator shall prepare and maintain a record for each tank that includes the following information:

(1) A tank identification number (or other unique identification description as selected by the owner or operator).

(2) A description of the tank dimensions and the tank design capacity.

(3) The date that each inspection required by § 63.906 of this subpart is performed.

(b) The owner or operator shall record the following information for each defect detected during inspections required by § 63.906 of this subpart: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.907(b)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

Subpart PP—National Emission Standards for Containers

SOURCE: 61 FR 34186, July 1, 1996, unless otherwise noted.

§ 63.920 Applicability.

The provisions of this subpart apply to the control of air emissions from containers for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for containers are placed

here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR Part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

§ 63.921 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

Container means a portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include but are not limited to drums, dumpsters, roll-off boxes, bulk cargo containers commonly known as “portable tanks” or “totes,” cargo tank trucks, and tank railcars.

Closure device means a cover, cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air emissions to the atmosphere by blocking an opening in a container or its cover when the device is secured in the closed position. Closure devices include devices that are detachable from the container (e.g., a drum head, a threaded plug), manually operated (e.g., a hinged dumpster lid, a truck tank hatch), or automatically operated (e.g., a spring loaded pressure relief valve).

Empty container means a container for which either of the following conditions exists, as applicable: the regulated-material is a hazardous waste and the container meets the conditions for an empty container specified in 40 CFR 261.7(b); or all regulated-material has been removed from the container except for any regulated-material that remains on the interior surfaces of the container as clingage or in pools on the container bottom due to irregularities in the container.

No detectable organic emissions means no escape of organics to the atmosphere as determined using the proce-

dures specified in § 63.925(a) of this subpart.

Regulated-material means the material (e.g. waste, wastewater, off-site material) required to be managed in containers using air emission controls in accordance with the standards specified in this subpart.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a container or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the container such as during filling of the container or to adjust the internal pressure of the container in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the container and its air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

§ 63.922 Standards—Container Level 1 controls.

(a) This section applies to owners and operators subject to this subpart and required to control air emissions from containers using Container Level 1 controls.

(b) A container using Container Level 1 controls is one of the following:

(1) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(2) A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum, a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a bulk cargo container equipped with a screw-type cap).

(3) An open-top container in which an organic vapor-suppressing barrier is placed on or over the regulated-material in the container such that no regulated-material is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

(c) A container used to meet the requirements of either paragraph (b)(2) or (b)(3) of this section shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the regulated-material to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability, the effects of contact with the material or its vapor managed in the container; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for container on which the cover is installed.

(d) Whenever a regulated-material is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(1) Opening of a closure device or cover is allowed for the purpose of adding material to the container as follows:

(i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the

container, upon conclusion of the filling operation.

(ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either: the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaves the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(2) Opening of a closure device or cover is allowed for the purpose of removing material from the container as follows:

(i) For the purpose of meeting the requirements of this section, an empty container as defined in §63.921 of this subpart may be open to the atmosphere at any time (e.g., covers and closure devices are not required to be secured in the closed position on an empty container).

(ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in §63.921 of this subpart, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes, or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of regulated-material. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access

equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(4) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the container internal pressure is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the container internal pressure exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(5) Opening of a safety device, as defined in § 63.921 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(e) The owner or operator shall inspect containers using Container Level 1 controls in accordance with the procedures specified in § 63.926(a) of this subpart.

(f) For the purpose of compliance with paragraph (b)(1) of this section, containers shall be used that meet the applicable U.S. DOT regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packagings or 49 CFR part 179—Specifications for Tank Cars.

(2) Regulated-material is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107 subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packaging; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for those packagings specified in 49 CFR 173.12(b).

§ 63.923 Standards—Container Level 2 controls.

(a) This section applies to owners and operators subject to this subpart and required to control air emissions from containers using Container Level 2 controls.

(b) A container using Container Level 2 controls is one of the following:

(1) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(2) A container that has been demonstrated to operate with no detectable organic emissions as defined in § 63.921 of this subpart.

(3) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using Method 27 in Appendix A of 40 CFR part 60 in accordance with the procedure specified in § 63.925(b) of this subpart.

(c) Transfer of regulated-material in to or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the regulated-material to the atmosphere, to the extent practical, considering the physical

properties of the regulated-material and good engineering and safety practices for handling flammable, ignitable, explosive, or other hazardous materials. Examples of container loading procedures that meet the requirements of this paragraph include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the regulated-material is filled, with subsequent purging of the transfer line before removing it from the container opening.

(d) Whenever a regulated-material is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(1) Opening of a closure device or cover is allowed for the purpose of adding material to the container as follows:

(i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level, the completion of a batch loading after which no additional material will be added to the container within 15 minutes, the person performing the loading operation leaves the immediate vicinity of the container, or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(2) Opening of a closure device or cover is allowed for the purpose of re-

moving material from the container as follows:

(i) For the purpose of meeting the requirements of this section, an empty container as defined in §63.921 of this subpart may be open to the atmosphere at any time (e.g., covers and closure devices are not required to be secured in the closed position on an empty container).

(ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in §63.921 of this subpart, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of regulated-material. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(4) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the container internal pressure is within the

internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the container internal pressure exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(5) Opening of a safety device, as defined in § 63.921 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(e) The owner or operator shall inspect containers using Container Level 2 controls in accordance with the procedures specified in § 63.926(a) of this subpart.

(f) For the purpose of compliance with paragraph (b)(1) of this section, containers shall be used that meet the applicable U.S. DOT regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packagings or 49 CFR part 179—Specifications for Tank Cars.

(2) Regulated-material is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107 subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packaging; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or op-

erator may comply with the exceptions for those packagings specified in 49 CFR 173.12(b).

§ 63.924 Standards—Container Level 3 controls.

(a) This section applies to owners and operators subject to this subpart and required to control air emissions from containers using Container Level 3 controls.

(b) A container using Container Level 3 controls is one of the following:

(1) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of paragraphs (c)(2) of this section.

(2) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs (c)(1) and (c)(2) of this section.

(c) The owner or operator shall meet the following requirements as applicable to the type of air emission control equipment selected by the owner or operator:

(1) The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” initially when the enclosure is first installed and, thereafter, annually.

(2) The closed-vent system and control device shall be designed and operated in accordance with the requirements of 40 CFR 63.692.

(d) Safety devices, as defined in § 63.921 of this subpart, may be installed and operated as necessary on any container, enclosure, closed-vent system,

or control device used to comply with this section.

§ 63.925 Test methods and procedures.

(a) Procedure for determining no detectable organic emissions for the purpose of complying with of this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the container filled with a material having an organic HAP concentration representative of the range of concentrations for the regulated materials expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the material placed in the container, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) Procedure for determining a container to be vapor-tight for the purpose of complying with this subpart.

(1) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A of this chapter.

(2) A pressure measurement device shall be used that has a precision of ± 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

§ 63.926 Inspection and monitoring requirements.

(a) Owners and operators of containers using either Container Level 1 or Container Level 2 controls in accordance with the provisions of §§ 63.922 and 63.923 of this subpart, respectively, shall inspect the container and its cover and closure devices as follows:

(1) In the case when a regulated material already is in the container at the

time the owner or operator first accepts possession of the container at the facility site and the container is not emptied (i.e., does not meet the conditions for an empty container) within 24 hours after the container arrives at the facility site, the container and its cover and closure devices shall be visually inspected by the owner or operator to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (a)(3) of this section.

(2) In the case when a container used for managing regulated-material remains at the facility site for a period of 1 year or more, the container and its cover and closure devices shall be visually inspected by the owner or operator initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (a)(3) of this section.

(3) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the regulated-material shall be removed from the container and the container shall not be used to manage regulated-material until the defect is repaired.

(b) Owners and operators using Container Level 3 controls in accordance with the provisions of § 63.924 of this subpart shall inspect and monitor the closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR Part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

§ 63.927 Recordkeeping requirements.

(a) Owners and operators that use Container Level 3 controls in accordance with the provisions of § 63.924 of this subpart shall prepare and maintain the following records:

(1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.

(2) Records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR Part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(b) [Reserved]

§ 63.928 Reporting requirements.

(a) For owners and operators that use Container Level 3 controls in accordance with the provisions of § 63.924 of this subpart, the owner or operator shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR Part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(b) [Reserved]

Subpart QQ—National Emission Standards for Surface Impoundments

SOURCE: 61 FR 34190, July 1, 1996, unless otherwise noted.

§ 63.940 Applicability.

The provisions of this subpart apply to the control of air emissions from surface impoundments for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for surface impoundments are placed here for administrative convenience and only apply to those owners and operators of facilities

subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart AA—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

§ 63.941 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

Closure device means a cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air emissions to the atmosphere by blocking an opening in a surface impoundment cover when the device is secured in the closed position. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring loaded pressure relief valve).

Cover means an air-supported structure, rigid roof, or other device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the material managed in a surface impoundment. A cover may have openings (such as access hatches) that are necessary for operation, inspection, maintenance, and repair of equipment in the surface impoundment on which the cover is used.

No detectable organic emissions means no escape of organics to the atmosphere as determined using the procedure specified in § 63.944(a) of this subpart.

Regulated-material means the material (e.g. waste, wastewater, off-site material) required to be managed in containers using air emission controls in accordance with the standards specified in this subpart.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to the surface impoundment air emission control equipment by venting gases or vapors

directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath the surface impoundment cover such as during filling of the surface impoundment or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

Surface impoundment means a unit that is a natural topographical depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquids. Examples of surface impoundments include holding, storage, settling, and aeration pits, ponds, and lagoons.

§ 63.942 Standards—Surface impoundment floating membrane cover.

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from a surface impoundment using a floating membrane cover.

(b) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(1) The floating membrane cover shall be designed to float on the liquid surface during normal operations, and form a continuous barrier over the entire surface area of the liquid.

(2) The cover shall be fabricated from a synthetic membrane material that is either:

(i) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

(ii) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in paragraph (b)(2)(i) of this section; and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(3) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(4) Except as provided for in paragraph (b)(5) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(5) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(6) The closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(c) Whenever a regulated-material is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be

secured in the closed position except as follows:

(1) Opening of closure devices or removal of the cover is allowed at the following times:

(i) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(ii) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the pressure in the vapor headspace underneath the cover in accordance with the cover design specifications. The device shall be designed to operate with no detectable organic emissions as defined in §63.941 of this subpart when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the cover vapor headspace pressure is within the pressure operating range determined by the owner or operator based on the cover manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

(3) Opening of a safety device, as defined in §63.941 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the floating membrane cover in accordance with the procedures specified in §63.946(a) of this subpart.

§ 63.943 Standards—Surface impoundment vented to control device.

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from a surface impoundment using a cover and venting the vapor headspace underneath the cover through a closed-vent system to a control device.

(b) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(1) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

(2) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in § 63.945(a) of this subpart.

(3) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(4) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(c) Whenever a regulated-material is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(1) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(i) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or re-install the cover, as applicable, to the surface impoundment.

(ii) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(2) Opening of a safety device, as defined in § 63.941 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the procedures specified in § 63.946(b) of this subpart.

§ 63.944 [Reserved]

§ 63.945 Test methods and procedures.

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and

associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the surface impoundment contains a material having an organic HAP concentration representative of the range of concentrations for the regulated materials expected to be managed in the surface impoundment. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated material placed in the surface impoundment, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60, appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some

pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) [Reserved]

§ 63.946 Inspection and monitoring requirements.

(a) Owners and operators that use a surface impoundment equipped with a floating membrane cover in accordance with the provisions of § 63.942 of this subpart shall meet the following requirements:

(1) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the floating membrane cover and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.947(a)(2) of this subpart.

(b) Owners and operators that use a surface impoundment equipped with a cover and vented through a closed-vent system to a control device in accordance with the provisions of § 63.943 of this subpart shall inspect the air emission control equipment as follows:

(1) The owner or operator shall visually inspect the cover in accordance with the following requirements:

(i) The cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the interface of the roof edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the cover and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.947(a)(2) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in § 63.693 in 40 CFR part 63 subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(c) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (c)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative surface impoundment or tank capacity is available at the site to accept the regulated-material normally managed in the surface impoundment. In this case, the owner or operator shall repair the

defect at the next time the process or unit that is generating the regulated-material managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.947 of this subpart.

§ 63.947 Recordkeeping requirements.

(a) Each owner or operator shall prepare and maintain the following records:

(1) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment.

(2) A record for each inspection required by § 63.946 of this subpart that includes the following information: a surface impoundment identification number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(3) The owner or operator shall record for each defect detected during inspections required by § 63.946 of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.946(c)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a surface impoundment equipped with a fixed-roof and vented through a closed-vent system to a control device in accordance with the provisions of § 63.943 of this subpart shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

§ 63.948 Reporting requirements.

Owners and operators that use a surface impoundment equipped with a fixed-roof and vented through a closed-

vent system to a control device in accordance with the provisions of § 63.943 of this subpart shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

Subpart RR—National Emission Standards for Individual Drain Systems

SOURCE: 61 FR 34193, July 1, 1996, unless otherwise noted.

§ 63.960 Applicability.

(a) The provisions of this subpart apply to the control of air emissions from individual drain systems for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for individual drain systems are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

(b) [Reserved]

§ 63.961 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

Closure device means a cap, cover, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening to the individual drain system. Closure devices include devices that are detachable (e.g., a plug or manhole cover), manually operated (e.g., a hinged access lid

or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

Hard-piping means pipe or tubing that is manufactured and properly installed in accordance with relevant standards (e.g., ANSI B31-3) and good engineering practices.

Individual drain system means a stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying wastewater streams or residuals. For the purpose of this subpart, an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of collecting rainfall runoff (e.g., stormwater sewer system) and is segregated from all other individual drain systems.

Junction box means a sump, manhole, or access point to a sewer line or a lift station.

Sewer line means a lateral, trunk line, branch line, or other conduit used to convey wastewater to a downstream waste management unit. Sewer lines include pipes, grates, and trenches.

Waste management unit means the equipment, structure, or device used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include: wastewater tanks, surface impoundments, individual drain systems, and biological wastewater treatment units. Examples of equipment that may be waste management units include containers, air flotation units, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units.

Water seal means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain liquid levels adequate to prevent air flow through the system) that creates a liquid barrier between the sewer line and the atmosphere. The liquid level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

§ 63.962 Standards.

(a) The owner or operator subject to this subpart shall control air emissions from the individual drain system using one or a combination of the following:

(1) Covers, water seals, and other air emission control equipment as specified in paragraph (b) of this section.

(2) Hard-piping.

(3) Venting of the individual drain system through a closed vent system to a control device in accordance with the following requirements:

(i) The individual drain system is designed and operated such that an internal pressure in the vapor headspace in the system is maintained at a level less than atmospheric pressure when the control device is operating, and

(ii) The closed vent system and control device are designed and operated in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(b) Owners and operators controlling air emissions from an individual drain system in accordance with paragraph (a)(1) of this section shall meet the following requirements:

(1) The individual drain system shall be designed to segregate the organic vapors from wastewater managed in the controlled individual drain system from entering any other individual drain system that is not controlled for air emissions in accordance with the standards specified in this subpart.

(2) *Drain control requirements.* Each drain shall be equipped with either a water seal or a closure device in accordance with the following requirements:

(i) When a water seal is used, the water seal shall be designed such that either:

(A) The outlet to the pipe discharging the wastewater extends below the liquid surface in the water seal of the drain; or

(B) A flexible shield or other device is installed which restricts wind motion across the open space between the outlet of the pipe discharging the wastewater and the drain.

(ii) When a closure device is used (e.g., securing a cap or plug on a drain

that is not receiving wastewater), the closure device shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the drain opening and the closure device.

(3) *Junction box control requirements.* Each junction box shall be equipped with controls as follows:

(i) The junction box shall be equipped with a closure device (e.g., manhole cover, access hatch) that is designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the junction box opening and the closure device.

(ii) If the junction box is vented, the junction box shall be vented in accordance with the following requirements:

(A) The junction box shall be vented through a closed vent system to a control device except as provided for in paragraph (b)(3)(ii)(B) of this section. The closed vent system and control device shall be designed and operated in accordance with the standards specified in § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(B) As an alternative to paragraph (b)(3)(ii)(A) of this section, the owner or operator may vent the junction box directly to the atmosphere when all of the following conditions are met:

(1) The junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level. Large changes in the size of the junction box vapor headspace created by using a pump to repeatedly empty and then refill the junction box do not meet this condition.

(2) The vent pipe installed on the junction box shall be at least 90 centimeters in length and no greater than 10.2 centimeter in diameter.

(3) Water seals are installed at the liquid entrance(s) to or exit from the junction box to restrict ventilation in the individual drain system and between components in the individual

drain system. The owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.

(4) *Sewer line control requirements.* Each sewer line shall not be open to the atmosphere and shall be covered or closed in a manner such that there are no visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces.

(5) *Operating requirements.* The owner or operator shall operate the air emission controls required by paragraphs (b)(2) through (b)(4) of this section in accordance with the following requirements:

(i) Each closure device shall be maintained in a closed position whenever wastewater is in the individual drain system except when it is necessary to remove or open the closure device for sampling or removing material in the individual drain system, or for equipment inspection, maintenance, or repair.

(ii) Each drain equipped with a water seal and open to the atmosphere shall be operated to ensure that the liquid in the water seal is maintained at the appropriate level. Examples of acceptable means for complying with this provision include but are not limited to using a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap; continuously dripping water into the trap using a hose; or regular visual observations.

(iii) Each closed-vent system and the control device used to comply with paragraph (b)(3)(ii)(A) of this section shall be operated in accordance with the standards specified in 40 CFR 63.693.

§ 63.963 [Reserved]

§ 63.964 Inspection and monitoring requirements.

(a) The owner or operator shall inspect the individual drain system in accordance with the following requirements:

(1) The individual drain system shall be visually inspected by the owner or operator as follows to check for defects

that could result in air emissions to the atmosphere.

(i) The owner or operator shall visually inspect each drain as follows:

(A) In the case when the drain is using a water seal to control air emissions, the owner or operator shall verify appropriate liquid levels are being maintained and identify any other defects that could reduce water seal control effectiveness.

(B) In the case when the drain is using a closure device to control air emissions, the owner or operator shall visually inspect each drain to verify that the closure device is in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, or gaps in the closure devices; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing plugs, caps, or other closure devices.

(ii) The owner or operator shall visually inspect each junction box to verify that closure devices are in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, or gaps in the closure devices; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(iii) The owner or operator shall visually inspect the unburied portion of each sewer line to verify that all closure devices are in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces.

(iv) The owner or operator shall perform the inspections initially at the time of installation of the water seals and closure devices for the individual drain system and, thereafter, at least once every year.

(v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b) of this section.

(vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.965(a) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in § 63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(b) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 15 calendar days after detection except as provided in paragraph (b)(2) of this section.

(2) Repair of a defect may be delayed beyond 15 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the individual drain system and no alternative capacity is available at the facility site to accept the wastewater normally managed in the individual drain system. In this case, the owner or operator shall repair the defect at the next time the process or unit that is generating the wastewater managed in the individual drain system stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.965(a)(3) of this subpart.

§ 63.965 Recordkeeping requirements.

(a) Each owner or operator complying with § 63.962(a)(1) of this subpart shall prepare and maintain the following records:

(1) A written site-specific individual drain system inspection plan that includes a drawing or schematic of the individual drain system and identifies each drain, junction box, and sewer line location.

(2) A record of the date that each inspection required by § 63.964(a) of this subpart is performed.

(3) When applicable, a record for each defect detected during inspections required by § 63.964(a) of this subpart that includes the following information: the location of the defect, a description of the defect, the date of detection, the

corrective action taken to repair the defect, and the date that the corrective action was completed. In the event that repair of the defect is delayed in accordance with the provisions of § 63.964(b)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a closed-vent system and a control device in accordance with the provisions of § 63.962(a)(3) or § 63.692(b)(3)(ii)(A) of this subpart shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

§ 63.966 Reporting requirements.

Owners and operators that use a closed-vent system and a control device in accordance with the provisions of § 63.962(a)(3) or § 63.962(b)(3)(ii)(A) of this subpart shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

Subparts SS–UU [Reserved]

Subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators

SOURCE: 61 FR 34195, July 1, 1996, unless otherwise noted.

§ 63.1040 Applicability.

The provisions of this subpart apply to the control of air emissions from oil-water separators and organic-water separators for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for oil-water separators and organic-water separators are placed here for administrative convenience and

only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

§ 63.1041 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

Closure device means a cap, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening in a fixed roof or floating roof. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

Continuous seal means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a separator. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

Fixed roof means a cover that is mounted on a separator in a stationary position and does not move with fluctuations in the level of the liquid managed in the separator.

Floating roof means a pontoon-type or double-deck type cover that rests upon and is supported by the liquid managed in a separator.

Liquid-mounted seal means a foam- or liquid-filled continuous seal that is mounted between the wall of the separator and the floating roof, and the seal is in contact with the liquid in a separator.

Oil-water separator means a separator as defined for this subpart that is used to separate oil from water.

Organic-water separator means a separator as defined for this subpart that is used to separate organics from water.

Metallic shoe seal means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the separator by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

No detectable organic emissions means no escape of organics to the atmosphere as determined using the procedure specified in § 63.1046(a) of this subpart.

Regulated-material means the material (e.g. waste, wastewater, off-site material) required to be managed in separators using air emission controls in accordance with the standards specified in this subpart.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to the separator air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath the separator cover. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

Separator means a waste management unit, generally a tank, that is used to separate oil or organics from water. A separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers,

and bar screens that are located directly after the individual drain system and prior to any additional treatment units such as an air flotation unit clarifier or biological treatment unit. Examples of a separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

§ 63.1042 Standards—Separator fixed roof.

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from an oil-water separator or organic-water separator using a fixed roof.

(b) The separator shall be equipped with a fixed roof designed to meet the following specifications:

(1) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the separator.

(2) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the separator wall.

(3) Each opening in the fixed roof shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device.

(4) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid and its vapors managed in the separator; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the separator on which the fixed roof is installed.

(c) Whenever a regulated-material is in the separator, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(1) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the separator for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the separator, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the separator.

(ii) To remove accumulated sludge or other residues from the bottom of separator.

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the pressure in vapor headspace underneath the fixed roof in accordance with the separator design specifications. The device shall be designed to operate with no detectable organic emissions, as determined using the procedure specified in § 63.1046(a) of this subpart, when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the pressure in the vapor headspace underneath the fixed roof is within the pressure operating range determined by the owner or operator based on the cover manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

(3) Opening of a safety device, as defined in § 63.1041 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the fixed roof and any closure devices in accordance with the requirements specified in §63.1047(a) of this subpart.

§63.1043 Standards—Separator floating roof.

(a) This section applies to owners and operators subject to this subpart and controlling air emissions from an oil-water separator or organic-water separator using a floating roof.

(b) The separator shall be equipped with a floating roof designed to meet the following specifications:

(1) The floating roof shall be designed to float on the liquid surface during normal operations.

(2) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the separator and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(i) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in §63.1041 of this subpart. The total area of the gaps between the separator wall and the primary seal shall not exceed 67 square centimeters (cm²) per meter of separator wall perimeter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm).

(ii) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the separator. The total area of the gaps between the separator wall and the secondary seal shall not exceed 6.7 square centimeters (cm²) per meter of separator wall perimeter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(3) Except as provided for in paragraph (b)(4) of this section, each opening in the floating roof shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(4) The floating roof may be equipped with one or more emergency roof

drains for removal of stormwater. Each emergency roof drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(c) Whenever a regulated-material is in the separator, the floating roof shall float on the liquid (i.e., off the roof supports) and each closure device shall be secured in the closed position except as follows:

(1) Opening of closure devices is allowed at the following times:

(i) To provide access to the separator for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the separator, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position.

(ii) To remove accumulated sludge or other residues from the bottom of separator.

(2) Opening of a safety device, as defined in §63.1041 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect the floating roof in accordance with the procedures specified in §63.1047(b) of this subpart.

§63.1044 Standards—Separator vented to control device.

(a) This section applies to owners and operators controlling air emissions from an oil-water or organic-water separator using a fixed roof and venting the vapor headspace underneath the fixed roof through a closed-vent system to a control device.

(b) The separator shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(1) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the separator.

(2) Each opening in the fixed roof not vented to the control device shall be

equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions, as determined using the procedure specified in § 63.1046(a) of this subpart.

(3) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the regulated-material to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the separator; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the separator on which the fixed roof is installed.

(4) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(c) Whenever a regulated-material is in the separator, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(1) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the separator for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of

such activities include those times when a worker needs to open a port to sample liquid in the separator, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the separator.

(ii) To remove accumulated sludge or other residues from the bottom of separator.

(2) Opening of a safety device, as defined in § 63.1041 of this subpart, is allowed at any time conditions require it to do so to avoid an unsafe condition.

(d) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the procedures specified in § 63.1047(c) of this subpart.

§ 63.1045 [Reserved]

§ 63.1046 Test methods and procedures.

(a) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart.

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the separator contains a material having an organic HAP concentration representative of the range of concentrations for the regulated-materials expected to be managed in the separator. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor

criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the regulated-material placed in the separator, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air); and

(ii) A mixture of methane in air at a concentration of approximately, but less than, 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60 appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(b) Procedure for performing floating roof seal gap measurements for the purpose of complying with this subpart.

(1) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually.

(2) The seal gap measurements shall be performed at one or more floating

roof levels when the roof is floating off the roof supports.

(3) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the separator and measure the circumferential distance of each such location.

(4) For a seal gap measured under paragraph (b)(2) of this section, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the separator wall to the seal and multiplying each such width by its respective circumferential distance.

(5) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal perimeter of the separator basin. These total gap areas for the primary seal and secondary seal then are compared to the respective standards for the seal type as specified in § 63.1043(b)(2) of this subpart.

§ 63.1047 Inspection and monitoring requirements.

(a) Owners and operators that use a separator equipped with a fixed roof in accordance with the provisions of § 63.1042 of this subpart shall meet the following requirements:

(1) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions to the atmosphere. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the

requirements of paragraph (d) of this section.

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.1048(a)(2) of this subpart.

(b) Owners and operators that use a separator equipped with a floating roof in accordance with the provisions of § 63.1043 of this subpart shall meet the following requirements:

(1) The owner or operator shall measure the floating roof seal gaps using the procedure specified in § 63.1046(b) of this subpart in accordance with the following requirements:

(i) The owner or operator shall perform measurements of gaps between the separator wall and the primary seal within 60 days after initial operation of the separator following installation of the floating roof and, thereafter, at least once every 5 years.

(ii) The owner or operator shall perform measurements of gaps between the separator wall and the secondary seal within 60 days after initial operation of the separator following installation of the floating roof and, thereafter, at least once every year.

(iii) If a separator ceases to hold regulated-material for a period of 1 year or more, subsequent introduction of regulated-material into the separator shall be considered an initial operation for the purpose of complying with paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(iv) In the event that the seal gap measurements do not conform to the specifications in § 63.1043(b)(2) of this subpart, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.1048 (a)(2) and (b) of this subpart.

(2) The owner or operator shall visually inspect the floating roof in accordance with the following requirements:

(i) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions to the atmosphere. Defects include, but

are not limited to: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the separator; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the floating roof and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.1048(a)(2) of this subpart.

(c) Owners and operators that use a separator equipped with a fixed roof and vented through a closed-vent system to a control device in accordance with the provisions of § 63.1044 of this subpart shall inspect the air emission control equipment as follows:

(1) The owner or operator shall visually inspect the fixed roof in accordance with the following requirements:

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform the inspections following installation of the fixed roof and, thereafter, at least once every year.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 63.1048(a)(2) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in § 63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(d) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (d)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the separator and no alternative treatment capacity is available at the facility site to accept the regulated-material normally treated in the separator. In this case, the owner or operator shall repair the defect at the next time the process or unit that is generating the regulated-material managed in the separator stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 63.1048(a)(3) of this subpart.

§ 63.1048 Recordkeeping requirements.

(a) Each owner or operator shall prepare and maintain the following records:

(1) Documentation describing the design of each floating roof and fixed roof installed on a separator, as applicable to the separator. When a floating roof is used, the documentation shall include the dimensions of the separator bay or section in which the floating roof is installed.

(2) A record for each inspection required by § 63.1047 of this subpart that includes the following information: a separator identification number (or other unique identification description as selected by the owner or operator) and the date of inspection.

(3) The owner or operator shall record for each defect detected during inspections required by § 63.1047 of this subpart the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 63.1047(d)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a separator equipped with a floating roof in accordance with the provisions of § 63.1043 of this subpart shall prepare and maintain records for each inspection required by § 63.1047(b)(1) describing the results of the seal gap measurements. The records shall include the date of the measurements performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in § 63.1043(b)(2) of this subpart, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the separator was emptied, if necessary.

(c) Owners and operators that use a separator equipped with a fixed-roof and vented through a closed-vent system to a control device in accordance with the provisions of § 63.1044 of this subpart shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of § 63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

§ 63.1049 Reporting requirements.

(a) Owners and operators that use a separator equipped with a floating roof in accordance with the provisions of § 63.1043 of this subpart shall notify the Administrator at least 30 calendar days prior to each seal gap measurement inspection performed to comply with the requirements in § 63.1047(b)(1) of this subpart.

(b) Owners and operators that use a separator equipped with a fixed-roof

and vented through a closed-vent system to a control device in accordance with the provisions of § 63.1044 of this subpart shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of § 63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

Subparts WW-DDD [Reserved]

Subpart EEE—National Emission Standards for Hazardous Air Pollutants From Hazardous Waste Combustors

SOURCE: 63 FR 33820, June 19, 1998, unless otherwise noted.

§ 63.1211 Notification requirements.

(a) *Notification of Intent To Comply (NIC)*. (1) All hazardous waste combustors subject to this subpart shall prepare a Notification of Intent to Comply that includes the following information:

(i) General information:

(A) The name and address of the owner/operator and the source;

(B) Whether the source is a major or an area source;

(C) Waste minimization and emission control technique(s) being considered;

(D) Emission monitoring technique(s) being considered;

(E) Waste minimization and emission control technique(s) effectiveness;

(F) A description of the evaluation criteria used or to be used to select waste minimization and/or emission control technique(s); and

(G) A statement that the source intends to comply with this subpart by controlling emissions from the combustion of hazardous waste pursuant to the standards of this subpart.

(ii) Information on key activities and estimated dates for these activities that will bring the source into compliance with emission control requirements of this subpart. The submission of key activities and dates is not intended to be static and may be revised by the source during the period the NIC is in effect. Revisions shall be submit-

ted to the regulatory authority and be made available to the public. The following are the key activities and dates that shall be included:

(A) The dates for beginning and completion of engineering studies to evaluate emission control systems or process changes for emissions;

(B) The date by which contracts for emission control systems or process changes for emission control will be awarded, or the date by which orders will be issued for the purchase of component parts to accomplish emission control or process changes;

(C) The date by which construction applications will be submitted;

(D) The date by which on-site construction, installation of emission control equipment, or process change is to be initiated;

(E) The date by which on-site construction, installation of emission control equipment, or process change is to be completed; and

(F) The date by which final compliance is to be achieved. The individual dates and milestones listed in paragraphs (a)(1)(ii)(A) through (F) of this section as part of the NIC are not requirements and therefore are not enforceable deadlines; the Agency is requiring paragraphs (a)(1)(ii)(A) through (F) of this section as part of the NIC only to inform the public of the source's intentions towards coming into compliance.

(iii) A summary of the public meeting required under paragraph (b) of this section.

(iv) For any source that does not intend to comply, but will not stop burning hazardous waste as required under paragraph (c) of this section, a certification that the designated source will:

(A) Stop burning hazardous waste on or before the compliance date of the emission standards of this Subpart; and

(B) Be necessary to combust the hazardous waste from another on-site source, during the year prior to the compliance date of the emission standards of this Subpart, because that other source is:

(I) Installing equipment to come into compliance with the emission standards of this Subpart; or

(2) Installing source reduction modifications to eliminate the need for further combustion of wastes.

(2) A draft of the NIC must be made available for public review no later than 30 days prior to the public meeting required under paragraph (b)(1) of this section.

(3) The final NIC must be submitted to the permitting agency no later than one year following the effective date of the emission standards of this subpart.

(b) *NIC Public Meeting and Notice.* (1) Prior to the submission of the NIC to the permitting agency, and no later than 10 months after the effective date of the emission standards of this subpart, the source shall hold at least one informal meeting with the public to discuss anticipated activities described in the draft NIC for achieving compliance with the MACT standards promulgated in this subpart. The source must post a sign-in sheet or otherwise provide a voluntary opportunity for attendees to provide their names and addresses.

(2) The source shall submit a summary of the meeting, along with the list of attendees and their addresses developed under paragraph (b)(1) of this section, and copies of any written comments or materials submitted at the meeting, to the permitting agency as part of the final NIC, in accordance with paragraph (a)(1)(iii) of this section.

(3) The source must provide public notice of the NIC meeting at least 30 days prior to the meeting. The source shall provide public notice in all of the following forms:

(i) *Newspaper advertisement.* The source shall publish a notice in a newspaper of general circulation in the county or equivalent jurisdiction of the source. In addition, the source shall publish the notice in newspapers of general circulation in adjacent counties or equivalent jurisdiction where such publication would be necessary to inform the affected public. The notice must be published as a display advertisement.

(ii) *Visible and accessible sign.* The source shall post a notice on a clearly marked sign at or near the source. If the source places the sign on the source's property, then the sign must

be large enough to be readable from the nearest spot where the public would pass by the source.

(iii) *Broadcast media announcement.* The source shall broadcast a notice at least once on at least one local radio station or television station.

(iv) *Notice to the facility mailing list.* The source shall provide a copy of the notice to the facility mailing list in accordance with § 124.10(c)(1)(ix) of this chapter.

(4) The notices required under paragraph (b)(3) of this section must include:

(i) The date, time, and location of the meeting;

(ii) A brief description of the purpose of the meeting;

(iii) A brief description of the source and proposed operations, including the address or a map (e.g., a sketched or copied street map) of the source location;

(iv) A statement encouraging people to contact the source at least 72 hours before the meeting if they need special access to participate in the meeting;

(v) A statement describing how the draft NIC can be obtained; and

(vi) The name, address, and telephone number of a contact person for the NIC.

(c) *Sources that do not intend to comply.* Those sources subject to the requirements of this subpart, except those sources meeting the requirements of paragraph (a)(1)(iv) of this section:

(1) Who signify in their NIC an intent not to comply with the requirements of this Subpart, must stop burning hazardous waste on or before two years after the effective date of the emission standards of this subpart;

(2) Who do not intend to comply with this subpart must include in their NIC a schedule that includes key dates for the steps to be taken to stop burning hazardous waste. Key dates include the date for submittal of RCRA closure documents.

§ 63.1212 Progress reports.

(a) *General.* Not later than two years after the effective date of the emission standards of this subpart, all sources subject to this Subpart except those hazardous waste combustion sources

that comply with paragraph (b)(2) of this section shall:

(1) Complete engineering design for any physical modifications to the source needed to comply with the emissions standards of this subpart;

(2) Submit applicable construction applications to the applicable regulatory authority; and

(3) Enter into a binding contractual commitment to purchase, fabricate, and install any equipment, devices, and ancillary structures needed to comply with the emission requirements of this subpart.

(b) *Demonstration.* (1) Hazardous waste combustion sources shall submit to the regulatory authority a progress report on or before two years after the effective date of the emission standards of this subpart which contains information demonstrating that the source has met the requirements of paragraph (a) of this section. This information will be used by the regulatory authority to determine if the source has made adequate progress towards compliance with the applicable emission standards.

(2) Sources that intend to come into compliance with the emissions standards of this subpart, but can do so without undertaking any of the activities described in paragraph (a) of this section, shall submit documentation either:

(i) Demonstrating that the source, at the time of the progress report, is in compliance with the emissions requirements; or

(ii) Specifying the steps that will be taken to bring the source into compliance, without undertaking any of the activities listed in paragraphs (a)(1) through (3) of this section.

(3) Sources that fail to comply with paragraph (a) above or paragraph (b)(2) of this section shall stop burning hazardous waste on or before the date two years after the effective date of the emission standards of this subpart.

(c) *Schedule.* (1) The progress report shall contain a detailed schedule that lists key dates for all projects that will bring the source into compliance with the requirements of this subpart (i.e., key dates for the activities required under paragraphs (b)(1)(i) through (iii) of this section). Dates shall cover the

time frame from the progress report through the compliance date of the emission standards of this subpart.

(2) The schedule shall contain the following dates:

(i) Bid and award dates for construction contracts and equipment supply contractors;

(ii) Milestones such as ground breaking, completion of drawings and specifications, equipment deliveries, intermediate construction completions, and testing;

(iii) The dates on which applications were submitted for or obtained operating and construction permits or licenses;

(iv) The dates by which approvals of any permits or licenses are anticipated; and

(v) The projected date by which the source will be in compliance with the requirements of this subpart.

(d) *Notice of intent to comply.* The progress report shall contain a statement that the source intends or does not intend to come into compliance with the applicable emission control requirements of this subpart.

(e) *Sources that do not intend to comply.* (1) Sources that: indicated in their NIC their intent not to comply with this subpart and stop burning hazardous waste prior to the submittal of a progress report; or meet the requirements of paragraph (a)(1)(iv) of this section are not required to include the requirements of paragraphs (b) and (c) of this section to their progress report, but shall include in their progress report: the date on which the source stopped burning hazardous waste; and the date(s) on which RCRA closure documents were submitted.

(2) Those sources that signify in the progress report, submitted not later than two years after the effective date of the emission standards of this subpart, their intention not to comply with the requirements of this subpart must stop burning hazardous waste on or before the date two years after the effective date of the emission standards of this subpart.

§ 63.1213 Certification.

(a) The Notice of Intent to Comply (NIC) and Progress Report submitted

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shall contain the following certification signed and dated by an authorized representative of the source:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(b) An authorized representative should be a responsible corporate officer (for a corporation), a general partner (for a partnership), the proprietor (of a sole proprietorship), or a principal executive officer or ranking elected official (for a municipality, State, Federal, or other public agency).

§ 63.1214 Extension of the compliance date.

(a) A source that intends to come into compliance with the requirements of this subpart, but due to the installation of controls will not meet the compliance date, may request an extension of the compliance date for one year.

(b) Sources subject to this subpart shall follow the requirements of § 63.6(i)(4) or § 63.1216 to request an extension of the compliance date.

§ 63.1215 Sources that become affected sources after the effective date of the emission standards of this subpart.

(a) A source that begins to burn hazardous waste after the effective date of the emission standards of this subpart, therefore becoming an affected source, but prior to 9 months after the effective date of the emission standards of this subpart shall comply with all the requirements of §§ 63.1211 through 63.1213 and associated time frames for public meetings and document submissions.

(b) A source that intends to begin burning hazardous waste more than 9 months after the effective date of the emission standards of this subpart, therefore becoming an affected source, shall meet all the requirements of §§ 63.1211 through 63.1213 prior to burning hazardous waste.

(1) Such sources shall make a draft NIC available, notice their public meeting, hold their public meeting, and submit a final NIC prior to burning hazardous waste.

(2) Such sources also shall submit their progress report at the time of the submittal of their final NIC.

§ 63.1216 Extension of the compliance date to install pollution prevention or waste minimization controls.

(a) *Applicability.* The owner or operator of any source subject to the requirements of this subpart may request from the Administrator or State with an approved Title V program an extension of one year to comply with the emission standards in this subpart, if the owner or operator can reasonably document that the installation of pollution prevention or waste minimization measures will significantly reduce the amount and/or toxicity of hazardous wastes entering the feedstream(s) of the combustion device(s) subject to this subpart, and that the facility could not otherwise install the necessary control measures and comply within three years after the effective date of the emission standards of this subpart.

(b) *Requirements for requesting an extension.* Requests for a one-year extension must be in writing, must be received not later than 12 months before the affected source's compliance date, and must contain the following information:

(1) A description of pollution prevention or waste minimization controls that, when installed, will significantly reduce the amount and/or toxicity of hazardous wastes entering the feedstream(s) of the combustion device(s) subject to this subpart. Pollution prevention or waste minimization measures may include: equipment or technology modifications, reformulation or redesign of products, substitution of raw materials, improvements in work practices, maintenance, training, inventory control, or recycling practices conducted as defined in 40 CFR 261.1(c);

(2) A description of other pollution controls to be installed that are necessary to comply with the emission standards;

(3) A reduction goal or estimate of the annual reductions in quantity and/or toxicity of hazardous waste(s) entering combustion feedstream(s) that will occur by installing the proposed pollution prevention or waste minimization measures;

(4) A comparison of reductions in the amounts and/or toxicity of hazardous wastes combusted after installation of pollution prevention or waste minimization measures to the amounts and/or toxicity of hazardous wastes combusted prior to the installation of these measures; and, if the difference is less than a fifteen percent reduction, a comparison to pollution prevention and waste minimization reductions recorded during the previous five years;

(5) Reasonable documentation that installation of the pollution prevention or waste minimization changes will not result in a net increase (except for documented increases in production) of hazardous constituents released to the environment through other emissions, wastes or effluents;

(6) Reasonable documentation that the design and installation of waste minimization and other measures that are necessary for compliance cannot otherwise be installed within the three year compliance period, and

(7) The information required in 40 CFR 63.6(i)(6)(i)(B) through (D).

(8) Documentation prepared under an existing State required pollution prevention program that contains the information may be enclosed with a request for extension in lieu of paragraphs (b)(1) through (7) of this section.

(c) *Approval of request for extension of compliance.* Based on the information provided in any request made under paragraph (a) of this section, the Administrator or State with an approved Title V program may grant an extension of compliance with the emission standards identified in paragraph (a) of this section. The extension will be in writing in accordance with §§ 63.6(i)(10)(i) through 63.6(i)(10)(v)(A). EPA and States must consider the information required in paragraph (a) of this section in approving or denying requests for one-year compliance extensions.

Subparts FFF–III [Reserved]

Subpart JJJ—National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins

SOURCE: 61 FR 48229, Sept. 12, 1996, unless otherwise noted.

§ 63.1310 Applicability and designation of affected sources.

(a) *Definition of affected source.* The provisions of this subpart apply to each affected source. An affected source is either an existing affected source or a new affected source. Existing affected source is defined in paragraph (a)(6) of this section, and new affected source is defined in paragraph (a)(7) of this section. The affected source also includes the emission points and equipment specified in paragraphs (a)(1) through (a)(5) of this section that are associated with each group of TPPU.

(1) Each wastewater stream.

(2) Each wastewater operation.

(3) Each heat exchange system.

(4) Each process contact cooling tower used in the manufacture of PET that is associated with a new affected source.

(5) Each process contact cooling tower used in the manufacture of PET using a continuous terephthalic acid high viscosity multiple end finisher process that is associated with an existing affected source.

(6) Except as specified in paragraphs (b) through (d) of this section, an existing affected source is defined as each group of one or more thermoplastic product process units (TPPUs) that is not part of a new affected source as defined in paragraph (a)(7) of this section, that is manufacturing the same primary product, where each TPPU uses as a reactant, or uses as a process solvent, or produces as a by-product or co-product any organic hazardous air pollutant (organic HAP), and that is located at a plant site that is a major source.

(7) Except as specified in paragraphs (b) through (d) of this section, a new affected source is defined as a source meeting the criteria of paragraph

(a)(7)(i), (a)(7)(ii), or (a)(7)(iii) of this section:

(i) At a plant site previously without HAP emissions points, each group of one or more TPPUs manufacturing the same primary product that is part of a major source on which construction commenced after March 29, 1995;

(ii) A TPPU meeting the criteria in paragraph (i)(1)(i) of this section; or

(iii) A reconstructed affected source meeting the criteria in paragraph (i)(2)(i) of this section.

(b) *TPPUs exempted from the affected source.* For a TPPU to be excluded from the designation of affected source due to the fact that it does not use as a reactant, or use as a process solvent, or produce as a by-product or co-product any organic HAP, the owner or operator shall comply with the requirements of paragraph (b)(1) of this section and shall comply with the requirements of paragraph (b)(2) of this section if requested to do so by the Administrator.

(1) Retain information, data, and analysis used to document the basis for the determination that the TPPU does not use as a reactant or use as a process solvent, or manufacture as a by-product or a co-product any organic HAP. Types of information that could document this determination include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, or engineering calculations.

(2) When requested by the Administrator, demonstrate that the TPPU does not use as a reactant, or use as a process solvent, or manufacture as a by-product or co-product any organic HAP.

(c) *Emission points exempted from the affected source.* The affected source does not include the emission points listed in paragraphs (c)(1) through (c)(6) of this section:

(1) Stormwater from segregated sewers;

(2) Water from fire-fighting and deluge systems in segregated sewers;

(3) Spills;

(4) Water from safety showers;

(5) Vessels and equipment storing and/or handling material that contain no organic HAP and/or organic HAP as impurities only; and

(6) Equipment that is intended to operate in organic HAP service for less than 300 hours during the calendar year.

(d) *Processes exempted from the affected source.* The processes specified in paragraphs (d)(1) through (d)(5) of this section are exempted from the affected source:

(1) Research and development facilities;

(2) Polymerization processes occurring in a mold;

(3) Processes which manufacture binder systems containing a thermoplastic product for paints, coatings, or adhesives;

(4) Finishing processes including equipment such as compounding units, spinning units, drawing units, extruding units, and other finishing steps; and

(5) Solid state polymerization processes.

(e) *Applicability determination of non-thermoplastic equipment included in a TPPU producing a thermoplastic product.* If a polymer that is not subject to this subpart is produced within the equipment (i.e., collocated) making up a TPPU and at least 50 percent of said polymer is used in the production of a thermoplastic product manufactured by said TPPU, the unit operations involved in the production of said polymer are considered part of the TPPU and are subject to this rule except as specified in this paragraph (e). If said unit operations are subject to another MACT standard regulating the same emission points, said unit operations are not subject to this subpart.

(f) *Primary product determination and applicability.* The primary product of a process unit shall be determined according to the procedures specified in paragraphs (f)(1) through (f)(2) of this section. Paragraphs (f)(3) through (f)(4) of this section describe whether or not a process unit is subject to this subpart. Paragraphs (f)(5) through (f)(7) of this section discuss compliance for those TPPUs operated as flexible operation units, as specified in paragraph (f)(2) of this section.

(1) If a process unit only manufactures one product, then that product shall represent the primary product of the process unit.

(2) If a process unit is designed and operated as a flexible operation unit, the primary product shall be determined as specified in paragraphs (f)(2)(i) or (f)(2)(ii) of this section based on the anticipated operations for the 5 years following September 12, 1996 for existing affected sources and for the first 5 years after initial start-up for new affected sources.

(i) If the flexible operation unit will manufacture one product for the greatest operating time over the five year period, then that product shall represent the primary product of the flexible operation unit.

(ii) If the flexible operation unit will manufacture multiple products equally based on operating time, then the product with the greatest production on a mass basis over the five year period shall represent the primary product of the flexible operation unit.

(3) If the primary product of a process unit is a thermoplastic product, then said process unit is considered a TPPU. If said TPPU meets all the criteria of paragraph (a) of this section, it is either an affected source or is part of an affected source comprised of other TPPU subject to this rule at the same plant site with the same primary product. The status of a process unit as a TPPU and as an affected source or part of an affected source shall not change regardless of what products are produced in the future by said TPPU, with the exception noted in paragraph (f)(3)(i) of this section.

(i) If a process unit terminates the production of all thermoplastic products and does not anticipate the production of any thermoplastic product in the future, the process unit is no longer a TPPU and is not subject to this rule after notification is made as specified in paragraph (f)(3)(ii) of this section.

(ii) The owner or operator of a process unit that wishes to remove the TPPU designation from the process unit, as specified in paragraph (f)(3)(i) of this section, shall notify the Administrator. This notification shall be accompanied by rationale for why it is anticipated that no thermoplastic products will be produced in the process unit in the future.

(iii) If a process unit meeting the criteria of paragraph (f)(3)(i) of this section begins the production of a thermoplastic product in the future, the owner or operator shall use the procedures in paragraph (f)(4)(i) of this section to determine if the process unit is re-designated as a TPPU.

(4) If the primary product of a process unit is not a thermoplastic product, then said process unit is not an affected source nor is it part of any affected source subject to this rule. Said process unit is not subject to this rule at any time, regardless of what product is being produced. The status of a process unit as not being a TPPU, and therefore not an affected source nor part of an affected source subject to this subpart, shall not change regardless of what products are produced in the future by said TPPU, with the exception noted in paragraph (f)(4)(i) of this section.

(i) If, at any time beginning September 12, 2001, the owner or operator determines that a thermoplastic product is the primary product for the process unit based on actual production data for any preceding consecutive five-year period, then the process unit shall be designated as a TPPU. If said TPPU meets all the criteria of paragraph (a) of this section and is not subject to another subpart of 40 CFR part 63, it is either an affected source or part of an affected source and shall be subject to this rule.

(ii) If a process unit meets the criteria of paragraph (f)(4)(i) of this section, the owner or operator shall notify the Administrator within 6 months of making this determination. The TPPU, as the entire affected source or part of an affected source, shall be in compliance with the provisions of this rule within 3 years from the date of such notification.

(iii) If a process unit is re-designated as a TPPU but does not meet all the criteria of paragraph (a) of this section, the owner or operator shall notify the Administrator within 6 months of making this determination. Said notification shall include documentation justifying the TPPU's status as not being an affected source or not being part of an affected source.

(5) Once the primary product of a process unit has been determined to be a thermoplastic product and it has been determined that all the criteria of paragraph (a) of this section are met for said TPPU, the owner or operator of the affected source shall comply with the standards for the primary product. Owners or operators of flexible operation units shall comply with the standards for the primary product as specified in either paragraph (f)(5)(i) or (f)(5)(ii) of this section, except as specified in paragraph (f)(5)(iii) of this section.

(i) Each owner or operator shall determine the group status of each emission point that is part of said flexible operation unit based on emission point characteristics when the primary product is being manufactured. Based on this finding, the owner or operator shall comply with the applicable standards for the primary product for each emission point, as appropriate, at all times, regardless of what product is being produced.

(ii) Alternatively, each owner or operator shall determine the group status of each emission point that is part of said flexible operation unit based on the emission point characteristics when each product produced by the flexible operation unit is manufactured, regardless of whether said product is a thermoplastic product or not. Based on these findings, the owner or operator shall comply with the applicable standards for the primary product for each emission point, as appropriate, regardless of what product is being produced.

NOTE: Under this scenario it is possible that the group status, and therefore the requirement to achieve emission reductions, for an emission point may change depending on the product being produced.

(iii) Whenever a flexible operation unit manufactures a product that meets the criteria of paragraph (b) of this section (i.e., does not use or produce any organic HAP), all activities associated with the manufacture of said product shall be exempt from the requirements of this rule, to include the operation and monitoring of control or recovery devices.

(6) The determination of the primary product for a process unit, to include

the determination of applicability of this subpart to process units that are designed and operated as flexible operation units, shall be reported in the Notification of Compliance Status required by § 63.1335(e)(5) when the primary product is determined to be a thermoplastic product. The Notification of Compliance Status shall include the information specified in either paragraph (f)(6)(i) or (f)(6)(ii) of this section. If the primary product is determined to be something other than a thermoplastic product, the owner or operator shall retain information, data, and analysis used to document the basis for the determination that the primary product is not a thermoplastic product.

(i) If the TPPU manufactures only one thermoplastic product, identification of said thermoplastic product.

(ii) If the TPPU is designed and operated as a flexible operation unit, the information specified in paragraphs (f)(6)(ii)(A) through (f)(6)(ii)(C) of this section, as appropriate.

(A) Identification of the primary product.

(B) Information concerning operating time and/or production mass for each product that was used to make the determination of the primary product under paragraph (f)(2)(i) or (f)(2)(ii) of this section.

(C) Identification of which compliance option, either paragraph (f)(5)(i) or (f)(5)(ii) of this section, has been selected by the owner or operator.

(7) To demonstrate compliance with the rule during those periods when a flexible operation unit that is subject to this subpart is producing a product other than a thermoplastic product or is producing a thermoplastic product that is not the primary product, the owner or operator shall comply with either paragraphs (f)(7)(i) through (f)(7)(ii) or paragraph (f)(7)(iii) of this section.

(i) Establish parameter monitoring levels, as specified in § 63.1334, for those emission points designated as Group 1, as appropriate.

(ii) Submit the parameter monitoring levels developed under paragraph (f)(7)(i) of this section and the basis for them in the Notification of Compliance

Status report as specified in § 63.1335(e)(5).

(iii) Demonstrate that the parameter monitoring levels established for the primary product are also appropriate for those periods when products other than the primary product are being produced. Material demonstrating this finding shall be submitted in the Notification of Compliance Status report as specified in § 63.1335(e)(5).

(g) *Storage vessel ownership determination.* The owner or operator shall follow the procedures specified in paragraphs (g)(1) through (g)(8) of this section to determine to which process unit a storage vessel shall belong.

(1) If a storage vessel is already subject to another subpart of 40 CFR part 63 on September 12, 1996, said storage vessel shall belong to the process unit subject to the other subpart.

(2) If a storage vessel is dedicated to a single process unit, the storage vessel shall belong to that process unit.

(3) If a storage vessel is shared among process units, then the storage vessel shall belong to that process unit located on the same plant site as the storage vessel that has the greatest input into or output from the storage vessel (i.e., said process unit has the predominant use of the storage vessel).

(4) If predominant use cannot be determined for a storage vessel that is shared among process units and if one of those process units is a TPPU subject to this subpart, the storage vessel shall belong to said TPPU.

(5) If predominant use cannot be determined for a storage vessel that is shared among process units and if more than one of the process units are TPPUs that have different primary products and that are subject to this subpart, then the owner or operator shall assign the storage vessel to any one of the said TPPUs.

(6) If the predominant use of a storage vessel varies from year to year, then predominant use shall be determined based on the utilization that occurred during the year preceding September 12, 1996 or based on the expected utilization for the 5 years following September 12, 1996 for existing affected sources, whichever is more representative of the expected operations for said storage vessel, and

based on the first 5 years after initial start-up for new affected sources. The determination of predominant use shall be reported in the Notification of Compliance Status required by § 63.1335(e)(5). If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(7) If the storage vessel begins receiving material from (or sending material to) another process unit; or ceasing to receive material from (or send material to) a process unit; or if the applicability of this subpart to a storage vessel has been determined according to the provisions of paragraphs (g)(1) through (g)(6) of this section and there is a significant change in the use of the storage vessel that could reasonably change the predominant use, the owner or operator shall reevaluate the applicability of this subpart to the storage vessel.

(8) Where a storage vessel is located at a major source that includes one or more process units which place material into, or receive materials from the storage vessel, but the storage vessel is located in a tank farm, the applicability of this subpart shall be determined according to the provisions in paragraphs (g)(8)(i) through (g)(8)(iv) of this section.

(i) The storage vessel may only be assigned to a process unit that utilizes the storage vessel and does not have an intervening storage vessel for that product (or raw materials, as appropriate). With respect to any process unit, an intervening storage vessel means a storage vessel connected by hard-piping to the process unit and to the storage vessel in the tank farm so that product or raw material entering or leaving the process unit flows into (or from) the intervening storage vessel and does not flow directly into (or from) the storage vessel in the tank farm.

(ii) If there is no process unit at the major source that meets the criteria of paragraph (g)(8)(i) of this section with respect to a storage vessel, this subpart does not apply to the storage vessel.

(iii) If there is only one process unit at the major source that meets the criteria of paragraph (g)(8)(i) of this section with respect to a storage vessel,

the storage vessel shall be assigned to that process unit.

(iv) If there are two or more process units at the major source that meet the criteria of paragraph (g)(8)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to one of those process units according to the provisions of paragraph (g)(7) of this section. The predominant use shall be determined among only those thermoplastic product process units that meet the criteria of paragraph (g)(8)(i) of this section.

(h) *Recovery operation equipment ownership determination.* The owner or operator shall follow the procedures specified in paragraphs (h)(1) through (h)(7) of this section to determine to which process unit recovery operation equipment shall belong.

(1) If recovery operation equipment is already subject to another subpart of 40 CFR part 63 on September 12, 1996, said recovery operation equipment shall belong to the process unit subject to the other subpart.

(2) If recovery operation equipment is used exclusively by a single process unit, the recovery operation shall belong to that process unit.

(3) If recovery operation equipment is shared among process units, then the recovery operation equipment shall belong to that process unit located on the same plant site as the recovery operation equipment that has the greatest input into or output from the recovery operation equipment (i.e., said process unit has the predominant use of the recovery operation equipment).

(4) If predominant use cannot be determined for recovery operation equipment that is shared among process units and if one of those process units is a TPPU subject to this subpart, the recovery operation equipment shall belong to said TPPU.

(5) If predominant use cannot be determined for recovery operation equipment that is shared among process units and if more than one of the process units are TPPUs that have different primary products and that are subject to this subpart, then the owner or operator shall assign the recovery operation equipment to any one of said TPPUs.

(6) If the predominant use of recovery operation equipment varies from year to year, then predominant use shall be determined based on the utilization that occurred during the year preceding September 12, 1996 or based on the expected utilization for the 5 years following September 12, 1996 for existing affected sources, whichever is the more representative of the expected operations for said recovery operations equipment, and based on the first 5 years after initial start-up for new affected sources. This determination shall be reported in the Notification of Compliance Status required by § 63.1335(e)(5). If the predominant use changes, the redetermination of predominant use shall be reported in the next Periodic Report.

(7) If there is an unexpected change in the utilization of recovery operation equipment that could reasonably change the predominant use, the owner or operator shall redetermine to which process unit the recovery operation belongs by reperforming the procedures specified in paragraphs (h)(2) through (h)(6) of this section.

(i) *Changes or additions to plant sites.* The provisions of paragraphs (i)(1) through (i)(4) of this section apply to owners or operators that change or add to their plant site or affected source. Paragraph (i)(5) of this section provides examples of what are and are not considered process changes for purposes of paragraph (i) of this section.

(1) *Adding a TPPU to a plant site.* The provisions of paragraphs (i)(1)(i) through (i)(1)(ii) of this section apply to owners or operators that add TPPUs to a plant site.

(i) If a TPPU is added to a plant site, said addition shall be a new affected source and shall be subject to the requirements for a new affected source in this subpart upon initial start-up or by September 12, 1996, whichever is later, if said addition meets the criteria specified in paragraphs (i)(1)(i)(A) through (i)(1)(i)(B) and either (i)(1)(i)(C) or (i)(1)(i)(D) of this section:

(A) Said addition meets the definition of construction in § 63.2;

(B) Such construction commenced after March 29, 1995; and

(C) Said addition has the potential to emit 10 tons per year or more of any

HAP or 25 tons per year or more of any combination of HAP, and the primary product of said addition is currently produced at the plant site as the primary product of an affected source; or

(D) The primary product of said addition is not currently produced at the plant site as the primary product of an affected source and the plant site meets, or after the addition is completed will meet, the definition of major source.

(ii) If a TPPU is added to a plant site, said addition shall be subject to the requirements for an existing affected source in this subpart upon initial start-up or by 3 years after September 12, 1996, whichever is later, if said addition does not meet the criteria specified in paragraph (i)(1)(i) of this section and the plant site meets, or after the addition is completed will meet, the definition of major source.

(2) *Adding emission points or making process changes to existing affected sources.* The provisions of paragraphs (i)(2)(i) through (i)(2)(ii) of this section apply to owners or operators that add emission points or make process changes to an existing affected source.

(i) If any process change is made or emission point is added to an existing affected source, or if a process change creating one or more additional Group 1 emission point(s) is made to an existing affected source, said affected source shall be a new affected source and shall be subject to the requirements for a new affected source in this subpart upon initial start-up or by September 12, 1996, whichever is later, if said process change or addition meets the criteria specified in paragraphs (i)(2)(i)(A) through (i)(2)(i)(B) of this section:

(A) Said process change or addition meets the definition of reconstruction in § 63.2; and

(B) Such reconstruction commenced after March 29, 1995.

(ii) If any process change is made or emission point is added to an existing affected source, or if a process change creating one or more additional Group 1 emission point(s) is made to an existing affected source and said process change or addition does not meet the criteria specified in paragraphs (i)(2)(i)(A) through (i)(2)(i)(B) of this

section, the resulting emission point(s) shall be subject to the requirements for an existing affected source in this subpart. Said emission point(s) shall be in compliance upon initial start-up or by 3 years after September 12, 1996, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making said process change or addition. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (i)(2)(iii)(A) through (i)(2)(iii)(C) of this section to establish a compliance date.

(iii) To establish a compliance date for an emission point or points specified in paragraph (i)(2)(ii) of this section, the procedures specified in paragraphs (i)(2)(iii)(A) through (i)(2)(iii)(C) of this section shall be followed.

(A) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(B) The compliance schedule shall be submitted within 180 days after the process change or addition is made or the information regarding said change or addition is known to the owner or operator, unless the compliance schedule has been previously submitted to the permitting authority. The compliance schedule may be submitted in the next Periodic Report if the process change or addition is made after the date the Notification of Compliance Status report is due.

(C) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

(3) *Existing source requirements for Group 2 emission points that become Group 1 emission points.* If a process change or addition that does not meet the criteria in paragraph (i)(1) or (i)(2) of this section is made to an existing plant site or existing affected source, and the change causes a Group 2 emission point to become a Group 1 emission point, for said emission point, the owner or operator shall comply with the requirements of this subpart for existing Group 1 emission points. Compliance shall be achieved as expeditiously

as practicable, but in no event later than 3 years after said emission point becomes a Group 1 emission point.

(4) *Existing source requirements for some emission points that become subject to the requirements of subpart H of this part.* If a compressor becomes subject to § 63.164, the owner or operator shall be in compliance upon initial start-up or by 3 years after September 12, 1996, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (i)(2)(iii)(A) through (i)(2)(iii)(C) of this section to establish a compliance date.

(5) *Determining what are and are not process changes.* For purposes of paragraph (i) of this section, examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is a replacement, removal, or the addition of recovery equipment. For purposes of paragraph (i) of this section, process changes do not include: process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status report required by § 63.1335(e)(5).

(j) *Applicability of this subpart except during periods of start-up, shutdown, and malfunction.* Each provision set forth in this subpart or referred to in this subpart shall apply at all times except during periods of start-up, shutdown, and malfunction if the start-up, shutdown, or malfunction precludes the ability of a particular emission point of an affected source to comply with one or more specific provisions to which it is subject. Start-up, shutdown, and malfunction is defined in § 63.1312 for all emission points except equipment leaks subject to subpart H of this part, which shall follow the provisions for periods of start-up, malfunction, and process unit shutdown, as defined in § 63.161. Only then shall an emission point not be required to comply with all applicable provisions of this subpart.

§ 63.1311 Compliance schedule and relationship to existing applicable rules.

(a) Affected sources are required to achieve compliance on or before the dates specified in paragraphs (b) through (d) of this section. Paragraph (e) of this section provides information on requesting compliance extensions. Paragraphs (f) through (l) of this section discuss the relationship of this subpart to subpart A of this part and to other applicable rules. Where an override of another authority of the Act is indicated in this subpart, only compliance with the provisions of this subpart is required. Paragraph (m) of this section specifies the meaning of time periods.

(b) New affected sources that commence construction or reconstruction after March 29, 1995, shall be in compliance with this subpart upon initial start-up or February 27, 1998, whichever is later, as provided in § 63.6(b), except that new affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is poly(ethylene terephthalate) (PET) shall be in compliance with § 63.1331 upon initial start-up or by September 12, 1999, whichever is later.

(c) Existing affected sources shall be in compliance with this subpart (except for § 63.1331 for which compliance is covered by paragraph (d) of this section) no later than September 12, 1999, as provided in § 63.6(c), unless an extension has been granted as specified in paragraph (e) of this section, except that the compliance date for the provisions contained in 40 CFR 63.1329 is temporarily extended from September 12, 1999, to February 27, 2001, for existing affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET using a continuous terephthalic acid high viscosity multiple end finisher process.

(d) Except as provided for in paragraphs (d)(1) through (d)(6) of this section, existing affected sources shall be in compliance with § 63.1331 no later than February 27, 1998 unless a request for a compliance extension is granted pursuant to section 112(i)(3)(B) of the Act, as discussed in § 63.182(a)(6).

(1) Compliance with the compressor provisions of § 63.164 shall occur no later than February 27, 1998 for any compressor meeting one or more of the criteria in paragraphs (d)(1)(i) through (d)(1)(iii) of this section if the work can be accomplished without a process unit shutdown, as defined in § 63.161:

- (i) The seal system will be replaced;
- (ii) A barrier fluid system will be installed; or
- (iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system.

(2) Compliance with the compressor provisions of § 63.164 shall occur no later than March 12, 1998, for any compressor meeting all the criteria in paragraphs (d)(2)(i) through (d)(2)(ii) of this section.

(i) The compressor meets one or more of the criteria specified in paragraphs (d)(1)(i)(A) through (d)(1)(i)(B) of this section:

(A) The work can be accomplished without a process unit shutdown as defined in § 63.161; or

(B) The additional time is actually necessary due to the unavailability of parts beyond the control of the owner or operator.

(ii) The owner or operator submits the request for a compliance extension to the U.S. Environmental Protection Agency (EPA) Regional Office at the addresses listed in § 63.13 no later than June 16, 1997. The request for a compliance extension shall contain the information specified in § 63.6(i)(6)(i) (A), (B), and (D). Unless the EPA Regional Office objects to the request for a compliance extension within 30 calendar days after receipt of the request, the request shall be deemed approved.

(3) If compliance with the compressor provisions of § 63.164 cannot reasonably be achieved without a process unit shutdown, as defined in § 63.161, the owner or operator shall achieve compliance no later than September 14, 1998. The owner or operator who elects to use this provision shall submit a request for a compliance extension in accordance with the requirements of paragraph (d)(2)(ii) of this section.

(4) If compliance with the compressor provisions of § 63.164 cannot be achieved without replacing the compressor or recasting the distance piece, the owner

or operator shall achieve compliance no later than September 13, 1999. The owner or operator who elects to use this provision shall submit a request for a compliance extension in accordance with the requirements of paragraph (d)(2)(ii) of this section.

(5) Compliance with the provisions of § 63.170 shall occur no later than September 13, 1999.

(6) Notwithstanding paragraphs (d)(1) through (d)(4) of this section, existing affected sources whose primary product, as determined using the procedures specified in § 63.1310(f), is PET shall be in compliance with § 63.1331 no later than September 12, 1999.

(e) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the existing source up to 1 additional year to comply with section 112(d) standards. For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application or to the Administrator as a separate submittal or as part of the Precompliance Report. Requests for extensions shall be submitted no later than the date the Precompliance Report is required to be submitted in § 63.1335(e)(3)(i). The dates specified in § 63.6(i) for submittal of requests for extensions shall not apply to this subpart.

(1) A request for an extension of compliance shall include the data described in § 63.6(i)(6)(i) (A), (B), and (D).

(2) The requirements in § 63.6(i)(8) through § 63.6(i)(14) shall govern the review and approval of requests for extensions of compliance with this subpart.

(f) Table 1 of this subpart specifies the provisions of subpart A of this part that apply and those that do not apply to owners and operators of affected sources subject to this subpart.

(g)(1) After the compliance dates specified in this section, an affected source subject to this subpart that is also subject to the provisions of subpart I of this part, is required to comply only with the provisions of this subpart. After the compliance dates specified in this section, said affected source shall no longer be subject to subpart I of this part.

(2) Said affected sources that elected to comply with subpart I of this part through a quality improvement program, as specified in § 63.175 or § 63.176 or both, may elect to continue these programs without interruption as a means of complying with this subpart. In other words, becoming subject to this subpart does not restart or reset the “compliance clock” as it relates to reduced burden earned through a quality improvement program.

(h) After the compliance dates specified in this section, a storage vessel that belongs to an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart Kb, is required to comply only with the provisions of this subpart. After the compliance dates specified in this section, said storage vessel shall no longer be subject to 40 CFR part 60, subpart Kb.

(i) (1) Except as provided in paragraph (i)(2) of this section, after the compliance dates specified in this section, affected sources producing PET using a continuous terephthalic acid process, producing PET using a continuous dimethyl terephthalate process, or producing polystyrene resin using a continuous process subject to this subpart that are also subject to the provisions of 40 CFR part 60, subpart DDD, are required to comply only with the provisions of this subpart. After the compliance dates specified in this section, said sources shall no longer be subject to 40 CFR part 60, subpart DDD.

(2) Existing affected sources producing PET using a continuous terephthalic acid high viscosity multiple end finisher process shall continue to be subject to 40 CFR 60.562-1(c)(2)(ii)(C). Once said affected source becomes subject to and achieves compliance with § 63.1329(c) of this subpart, said affected source is no longer subject to the provisions of 40 CFR part 60, subpart DDD.

(j) Affected sources subject to this subpart that are also subject to the provisions of subpart Q of this part shall comply with both subparts.

(k) After the compliance dates specified in this section, an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart VV, is required to comply only with the provisions of this subpart.

After the compliance dates specified in this section, said source shall no longer be subject to 40 CFR part 60, subpart VV.

(l) After the compliance dates specified in this section, a distillation operation that belongs to an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart NNN, is required to comply only with the provisions of this subpart. After the compliance dates specified in this section, said distillation operation shall no longer be subject to 40 CFR part 60, subpart NNN.

(m) All terms in this subpart that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), unless specified otherwise in the section or subsection that imposes the requirement, refer to the standard calendar periods.

(1) Notwithstanding time periods specified in this subpart for completion of required tasks, such time periods may be changed by mutual agreement between the owner or operator and the Administrator, as specified in subpart A of this part (e.g., a period could begin on the compliance date or another date, rather than on the first day of the standard calendar period). For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.

(2) Where the period specified for compliance is a standard calendar period, if the initial compliance date occurs after the beginning of the period, compliance shall be required according to the schedule specified in paragraphs (m)(i) or (m)(ii) of this section, as appropriate.

(i) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs, if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or

(ii) In all other cases, compliance shall be required before the end of the first full standard calendar period after

the period within which the initial compliance deadline occurs.

(3) In all instances where a provision of this subpart requires completion of a task during each multiple successive period, an owner or operator may perform the required task at any time during the specified period, provided that the task is conducted at a reasonable interval after completion of the task during the previous period.

[61 FR 48229, Sept. 12, 1996, as amended at 62 FR 1838, Jan. 14, 1997; 62 FR 30995, June 6, 1997; 63 FR 9945, Feb. 27, 1998; 63 FR 15315, Mar. 31, 1998]

§ 63.1312 Definitions.

(a) The following terms used in this subpart shall have the meaning given them in § 63.2, § 63.101, § 63.111, and § 63.161 as specified after each term:

Act (§ 63.2)
 Administrator (§ 63.2)
 Automated monitoring and recording system (§ 63.111)
 Average concentration (§ 63.111)
 Boiler (§ 63.111)
 Bottoms receiver (§ 63.161)
 By compound (§ 63.111)
 By-product (§ 63.101)
 Car-seal (§ 63.111)
 Chemical manufacturing process unit (§ 63.101)
 Closed-vent system (§ 63.111)
 Co-product (§ 63.101)
 Combustion device (§ 63.111)
 Commenced (§ 63.2)
 Compliance date (§ 63.2)
 Compliance schedule (§ 63.2)
 Connector (§ 63.161)
 Construction (§ 63.2)
 Continuous monitoring system (§ 63.2)
 Continuous record (§ 63.111)
 Continuous recorder (§ 63.111)
 Cover (§ 63.111)
 Distillation unit (§ 63.111)
 Emission standard (§ 63.2)
 Emissions averaging (§ 63.2)
 EPA (§ 63.2)
 Equipment (§ 63.161)
 Equipment leak (§ 63.101)
 Existing source (§ 63.2)
 External floating roof (§ 63.111)
 Fill (§ 63.111)
 Fixed roof (§ 63.111)
 Flame zone (§ 63.111)
 Flexible operation unit (§ 63.101)
 Floating roof (§ 63.111)
 Flow indicator (§ 63.111)

Group 1 wastewater streams (§ 63.111)
 Group 2 wastewater streams (§ 63.111)
 Halogens and hydrogen halides (§ 63.111)
 Hazardous air pollutant (§ 63.2)
 Impurity (§ 63.101)
 In organic hazardous air pollutant service (§ 63.161)
 Incinerator (§ 63.111)
 Instrumentation system (§ 63.161)
 Internal floating roof (§ 63.111)
 Lesser quantity (§ 63.2)
 Major source (§ 63.2)
 Malfunction (§ 63.2)
 Mass flow rate (§ 63.111)
 Maximum true vapor pressure (§ 63.111)
 New source (§ 63.2)
 Open-ended valve or line (§ 63.161)
 Operating permit (§ 63.101)
 Organic HAP service (§ 63.161)
 Organic monitoring device (§ 63.111)
 Owner or operator (§ 63.2)
 Performance evaluation (§ 63.2)
 Performance test (§ 63.2)
 Permitting authority (§ 63.2)
 Plant site (§ 63.101)
 Point of generation (§ 63.111)
 Potential to emit (§ 63.2)
 Primary fuel (§ 63.111)
 Process heater (§ 63.111)
 Process unit shutdown (§ 63.161)
 Process wastewater (§ 63.101)
 Process wastewater stream (§ 63.111)
 Product separator (§ 63.111)
 Reactor (§ 63.111)
 Reconstruction (§ 63.2)
 Recovery device (§ 63.111)
 Reference control technology for process vents (§ 63.111)
 Reference control technology for storage vessels (§ 63.111)
 Reference control technology for wastewater (§ 63.111)
 Relief valve (§ 63.111)
 Research and development facility (§ 63.101)
 Residual (§ 63.111)
 Run (§ 63.2)
 Secondary fuel (§ 63.111)
 Sensor (§ 63.161)
 Shutdown (§ 63.2)
 Specific gravity monitoring device (§ 63.111)
 Start-up (§ 63.2)
 Start-up, shutdown, and malfunction plan (§ 63.101)
 State (§ 63.2)
 Surge control vessel (§ 63.161)
 Temperature monitoring device (§ 63.111)

Test method (§ 63.2)
Total resource effectiveness index value (§ 63.111)
Treatment process (§ 63.111)
Unit operation (§ 63.101)
Visible emission (§ 63.2)
Waste management unit (§ 63.111)
Wastewater (§ 63.101)
Wastewater stream (§ 63.111)

(b) All other terms used in this subpart shall have the meaning given them in this section. If a term is defined in §§ 63.2, 63.101, 63.111, or 63.161 and in this section, it shall have the meaning given in this section for purposes of this subpart.

Acrylonitrile butadiene styrene latex resin (ABS latex) means ABS produced through an emulsion process, however the product is not coagulated or dried as typically occurs in an emulsion process.

Acrylonitrile butadiene styrene resin (ABS) means styrenic terpolymers consisting primarily of acrylonitrile, 1,3-butadiene, and styrene monomer units. ABS is usually composed of a styrene-acrylonitrile copolymer continuous phase with dispersed butadiene derived rubber.

Acrylonitrile styrene acrylate resin (ASA) means a resin formed using acrylic ester-based elastomers to impact-modify styrene acrylonitrile resin matrices.

Aggregate batch vent stream means a gaseous emission stream containing only the exhausts from two or more batch process vents that are ducted together before being routed to a control device that is in continuous operation.

Affected source is defined in § 63.1310(a).

Alpha methyl styrene acrylonitrile resin (AMSAN) means copolymers consisting primarily of alpha methyl styrene and acrylonitrile.

Average flow rate, as used in conjunction with wastewater provisions, is determined by the specifications in § 63.144(c); or, as used in conjunction with batch process vent provisions, is determined by the specifications in § 63.1323(e).

Batch cycle means the operational step or steps, from start to finish, that occur as part of a batch unit operation. Batch cycle limitation means an en-

forceable restriction on the number of batch cycles that can be performed in a year for an individual batch process vent.

Batch emission episode means a discrete emission venting episode associated with a single batch unit operation. Multiple batch emission episodes may occur from a single batch unit operation.

Batch process means a discontinuous process involving the bulk movement of material through sequential manufacturing steps. Mass, temperature, concentration, and other properties of the process vary with time. Addition of raw material and withdrawal of product do not typically occur simultaneously in a batch process. For the purposes of this subpart, a process producing polymers is characterized as continuous or batch based on the operation of the polymerization reactors.

Batch process vent means a point of emission from a batch unit operation having a gaseous emission stream with annual organic HAP emissions greater than 225 kilograms per year. Batch process vents exclude relief valve discharges and leaks from equipment regulated under § 63.1331.

Batch unit operation means a unit operation operated in a batch process mode.

Compounding unit means a unit operation which blends, melts, and resolidifies solid polymers for the purpose of incorporating additives, colorants, or stabilizers into the final thermoplastic product. A unit operation whose primary purpose is to remove residual monomers from polymers is not a compounding unit.

Continuous process means a process where the inputs and outputs flow continuously through sequential manufacturing steps throughout the duration of the process. Continuous processes typically approach steady-state conditions. Continuous processes typically involve the simultaneous addition of raw material and withdrawal of product. For the purposes of this subpart, a process producing polymers is characterized as continuous or batch based on the operation of the polymerization reactors.

Continuous process vent means a point of emission from a continuous unit operation within an affected source having a gaseous emission stream containing greater than 0.005 weight percent total organic HAP. Continuous process vents exclude relief valve discharges and leaks from equipment regulated under § 63.1331.

Continuous unit operation means a unit operation operated in a continuous process mode.

Control device is defined in § 63.111, except that the term “process vents” shall be replaced with the term “continuous process vents subject to § 63.1315” for the purpose of this subpart.

Drawing unit means a unit operation which converts polymer into a different shape by melting or mixing the polymer and then pulling it through an orifice to create a continuously extruded product.

Emission point means an individual continuous process vent, batch process vent, storage vessel, wastewater stream, equipment leak, heat exchange system, or process contact cooling tower.

Emulsion process means a process carried out with the reactants in an emulsified form (e.g., polymerization reaction).

Expandable polystyrene resin (EPS) means a polystyrene bead to which a blowing agent has been added using either an in-situ suspension process or a post-impregnation suspension process.

Extruding unit means a unit operation which converts polymer into a different shape by melting or mixing the polymer and then forcing it through an orifice to create a continuously extruded product.

Group 1 batch process vent means a batch process vent releasing annual organic HAP emissions greater than the level specified in § 63.1323(d) and with a cutoff flow rate, calculated in accordance with § 63.1323(f), greater than or equal to the annual average flow rate.

Group 2 batch process vent means a batch process vent that does not fall within the definition of a Group 1 batch process vent.

Group 1 continuous process vent means a continuous process vent releasing a gaseous emission stream that has a

total resource effectiveness index value, calculated according to § 63.115, less than or equal to 1.0 unless the continuous process vent is associated with existing thermoplastic product process units that produce methyl methacrylate butadiene styrene resin, then said vent falls within the Group 1 definition if the released emission stream has a total resource effectiveness index value less than or equal to 3.7.

Group 2 continuous process vent means a continuous process vent that does not fall within the definition of a Group 1 continuous process vent.

Group 1 storage vessel means a storage vessel at an existing affected source that meets the applicability criteria specified in Table 2 or Table 3 of this subpart, or a storage vessel at a new affected source that meets the applicability criteria specified in Table 4 or Table 5 of this subpart.

Group 2 storage vessel means a storage vessel that does not fall within the definition of a Group 1 storage vessel.

Halogenated aggregate batch vent stream means an aggregate batch vent stream determined to have a total mass emission rate of halogen atoms contained in organic compounds of 3,750 kilograms per year or greater determined by the procedures specified in § 63.1323(h).

Halogenated batch process vent means a batch process vent determined to have a mass emission rate of halogen atoms contained in organic compounds of 3,750 kilograms per year or greater determined by the procedures specified in § 63.1323(h).

Halogenated continuous process vent means a continuous process vent determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms per hour or greater determined by the procedures specified in § 63.115(d)(2)(v).

Heat exchange system means any cooling tower system or once-through cooling water system (e.g., river or pond water) designed and operated to not allow contact between the cooling medium and process fluid or gases (i.e., a noncontact system). A heat exchange system can include more than one heat exchanger and can include recirculating or once-through cooling systems.

Maintenance wastewater means wastewater generated by the draining of process fluid from components in the TPPU into an individual drain system prior to or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewater include descaling of heat exchanger tubing bundles, cleaning distillation column traps, draining of low legs and high point bleeds, draining of pumps into an individual drain system, reactor and equipment washdown, and draining of portions of the TPPU for repair.

Mass process means a process carried out through the use of thermal energy (e.g., polymerization reaction). Mass processes do not utilize emulsifying or suspending agents, but can utilize catalysts or other additives.

Material recovery section means the equipment that recovers unreacted or by-product materials from any process section for return to the TPPU, off-site purification or treatment, or sale. Equipment used to store recovered materials are not included. Equipment designed to separate unreacted or by-product material from the polymer product are to be included in this process section, provided that at the time of initial compliance some of the material is recovered for reuse in the process, off-site purification or treatment, or sale. Otherwise, such equipment are to be assigned to one of the other process sections, as appropriate. If equipment are used to recover unreacted or by-product material and return it directly to the same piece of process equipment from which it was emitted, then said recovery equipment are considered part of the process section that contains the process equipment. On the other hand, if equipment are used to recover unreacted or by-product material and return it to a different piece of process equipment in the same process section, said recovery equipment are considered part of a material recovery section. Equipment that treats recovered materials are to be included in this process section, but equipment that also treats raw materials are not to be included in this process section.

The latter equipment are to be included in the raw materials preparation section. Equipment used for the on-site recovery of ethylene glycol from PET plants, however, are not included in the material recovery section; they are to be included in the polymerization reaction section. Equipment used for the on-site recovery of ethylene glycol and other materials (e.g., methanol) from PET plants are not included in the material recovery section; these equipment are to be included in the polymerization reaction section.

Methyl methacrylate acrylonitrile butadiene styrene resin (MABS) means styrenic polymers containing methyl methacrylate, acrylonitrile, butadiene, and styrene. MABS is prepared by dissolving or dispersing polybutadiene rubber in a mixture of methyl methacrylate-acrylonitrile-styrene and butadiene monomer. The graft polymerization is carried out by a bulk or a suspension process.

Methyl methacrylate butadiene styrene resin (MBS) means styrenic polymers containing methyl methacrylate, butadiene, and styrene. Production of MBS is achieved using an emulsion process in which methyl methacrylate and styrene are grafted onto a styrene-butadiene rubber.

Nitrile resin means a resin produced through the polymerization of acrylonitrile, methyl acrylate, and butadiene latex using an emulsion process.

Organic hazardous air pollutant(s) (organic HAP) means one or more of the chemicals listed in Table 6 of this subpart or any other chemical which is:

(1) Knowingly introduced into the manufacturing process other than as an impurity, or has been or will be reported under any Federal or State program, such as Title V or the Emergency Planning and Community Right-To-Know Act section 311, 312, or 313; and

(2) Listed in Table 2 of subpart F of this part.

PET using a dimethyl terephthalate process means the manufacturing of PET based on the esterification of dimethyl terephthalate with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate

that is subsequently polymerized to form PET.

PET using a terephthalic acid process means the manufacturing of PET based on the esterification reaction of terephthalic acid with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate that is subsequently polymerized to form PET.

Poly(ethylene terephthalate) resin (PET) means a polymer or copolymer comprised of at least 50 percent bis-(2-hydroxyethyl)-terephthalate by weight.

Polymerization reaction section means the equipment designed to cause monomer(s) to react to form polymers, including equipment designed primarily to cause the formation of short polymer chains (e.g., oligomers or low polymers), but not including equipment designed to prepare raw materials for polymerization (e.g., esterification vessels). For the purposes of these standards, the polymerization reaction section begins with the equipment used to transfer the materials from the raw materials preparation section and ends with the last vessel in which polymerization occurs. Equipment used for the on-site recovery of ethylene glycol from PET plants, however, are included in this process section, rather than in the material recovery process section.

Polystyrene resin means a thermoplastic polymer or copolymer comprised of at least 80 percent styrene or para-methylstyrene by weight.

Primary product is defined in and determined by the procedures specified in § 63.1310(f).

Process contact cooling tower system means a cooling tower system that is designed and operated to allow contact between the cooling medium and process fluid or gases.

Process section means the equipment designed to accomplish a general but well-defined task in polymers production. Process sections include, but are not limited to, raw materials preparation, polymerization reaction, and material recovery. A process section may be dedicated to a single TPPU or common to more than one TPPU.

Process unit means a collection of equipment assembled and connected by pipes or ducts to process raw materials and to manufacture a product.

Process vent means a point of emission from a unit operation having a gaseous emission stream. Typical process vents include condenser vents, dryer vents, vacuum pumps, steam ejectors, and atmospheric vents from reactors and other process vessels, but do not include pressure relief valves.

Product means a compound or material which is manufactured by a process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Raw materials preparation section means the equipment at a polymer manufacturing plant designed to prepare raw materials, such as monomers and solvents, for polymerization. For the purposes of these standards, this process section begins with the equipment used to transfer raw materials from storage and/or the equipment used to transfer recovered material from the material recovery process sections, and ends with the last piece of equipment that prepares the material for polymerization. The raw materials preparation section may include equipment that is used to purify, dry, or otherwise treat raw materials or raw and recovered materials together; to activate catalysts; and to promote esterification including the formation of some short polymer chains (oligomers). The raw materials preparation section does not include equipment that is designed primarily to accomplish the formation of oligomers, the treatment of recovered materials alone, or the storage of raw materials.

Recovery operations equipment means the equipment used to separate the components of process streams. Recovery operations equipment includes distillation unit, condensers, etc. Equipment used for wastewater treatment shall not be considered recovery operations equipment.

Solid state polymerization unit means a unit operation which, through the application of heat, furthers the polymerization (i.e., increases the intrinsic viscosity) of polymer chips.

Steady-state conditions means that all variables (temperatures, pressures, volumes, flow rates, etc.) in a process do not vary significantly with time; minor

fluctuations about constant mean values can occur.

Storage vessel means a tank or other vessel that is used to store liquids that contain one or more organic HAP and that has been assigned, according to the procedures in § 63.1310(g), to a TPPU that is subject to this subpart. Storage vessels do not include:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without breathing or working losses to the atmosphere;
- (3) Vessels with capacities smaller than 38 cubic meters;
- (4) Vessels and equipment storing and/or handling material that contains no organic HAP and/or organic HAP as impurities only; and
- (5) Wastewater storage tanks.

Styrene acrylonitrile resin (SAN) means copolymers consisting primarily of styrene and acrylonitrile monomer units.

Suspension process means a process carried out with the reactants in a state of suspension, typically achieved through the use of water and/or suspending agents (e.g., polymerization reaction).

Thermoplastic product means one of the following types of products:

- (1) ABS latex;
- (2) ABS using a batch emulsion process;
- (3) ABS using a batch suspension process;
- (4) ABS using a continuous emulsion process;
- (5) ABS using a continuous mass process;
- (6) ASA/AMSAN;
- (7) EPS;
- (8) MABS;
- (9) MBS;
- (10) nitrile resin;
- (11) PET using a batch dimethyl terephthalate process;
- (12) PET using a batch terephthalic acid process;
- (13) PET using a continuous dimethyl terephthalate process;
- (14) PET using a continuous terephthalic acid process;
- (15) PET using a continuous terephthalic acid high viscosity multiple end finisher process;

(16) Polystyrene resin using a batch process;

(17) Polystyrene resin using a continuous process;

(18) SAN using a batch process; or

(19) SAN using a continuous process.

Thermoplastic product process unit (TPPU) means a collection of equipment assembled and connected by process pipes or ducts, excluding gas, sanitary sewage, water (i.e., not wastewater), and steam connections, used to process raw materials and to manufacture a thermoplastic product as its primary product. This collection of equipment includes process vents from process vessels; storage vessels, as determined in § 63.1310(g); and the equipment (i.e., pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are associated with the thermoplastic product process unit) that are subject to the equipment leak provisions as specified in § 63.1331.

Total organic compounds (TOC) means those compounds excluding methane and ethane measured according to the procedures of Method 18 or Method 25A, 40 CFR part 60, appendix A.

Year means any consecutive 12-month period or 365 rolling days. For the purposes of emissions averaging, the term year applies to any 12-month period selected by the facility and defined in its Emissions Averaging Plan. For the purposes of batch cycle limitations, the term year applies to the 12-month period defined by the facility in its Notification of Compliance Status.

§ 63.1313 Emission standards.

(a) Except as allowed under paragraphs (b) and (c) of this section, the owner or operator of an existing or new affected source shall comply with the provisions in:

- (1) Section 63.1314 for storage vessels;
- (2) Sections 63.1315 or 63.1316 through 63.1320, as appropriate, for continuous process vents;
- (3) Section 63.1321 for batch process vents;
- (4) Section 63.1328 for heat exchange systems;
- (5) Section 63.1329 for process contact cooling towers;
- (6) Section 63.1330 for wastewater;

(7) Section 63.1331 for equipment leaks;

(8) Section 63.1333 for additional test methods and procedures;

(9) Section 63.1334 for parameter monitoring levels and excursions; and

(10) Section 63.1335 for general record-keeping and reporting requirements.

(b) Instead of complying with §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, and 63.1330, the owner or operator of an existing affected source may elect to control any or all of the storage vessels, batch process vents, continuous process vents, and wastewater streams within the affected source to different levels using an emissions averaging compliance approach that uses the procedures specified in § 63.1332. An owner or operator electing to use emissions averaging must still comply with the provisions of §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, and 63.1330 for affected source emission points not included in the emissions average.

(c) A State may decide not to allow the use of the emissions averaging compliance approach specified in paragraph (b) of this section.

§ 63.1314 Storage vessel provisions.

(a) This section applies to each storage vessel that belongs to an affected source, as determined by § 63.1310(g). Except as provided in paragraphs (b) through (d) of this section, the owner or operator of said storage vessels shall comply with the requirements of §§ 63.119 through 63.123 and 63.148, with the differences noted in paragraphs (a)(1) through (a)(16) of this section for the purposes of this subpart.

(1) When the term “storage vessel” is used in §§ 63.119 through 63.123 and 63.148, the definition of this term in § 63.1312 shall apply for the purposes of this subpart.

(2) When the term “Group 1 storage vessel” is used in §§ 63.119 through 63.123 and 63.148, the definition of this term in § 63.1312 shall apply for the purposes of this subpart.

(3) When the term “Group 2 storage vessel” is used in §§ 63.119 through 63.123 and 63.148, the definition of this term in § 63.1312 shall apply for the purposes of this subpart.

(4) When the emissions averaging provisions of § 63.150 are referred to in §§ 63.119 and 63.123, the emissions averaging provisions contained in § 63.1332 shall apply for the purposes of this subpart.

(5) When December 31, 1992, is referred to in § 63.119, March 29, 1995 shall apply instead, for the purposes of this subpart.

(6) When April 22, 1994, is referred to in § 63.119, September 12, 1996 shall apply instead, for the purposes of this subpart.

(7) Each owner or operator shall comply with this paragraph (a)(7) instead of § 63.120(d)(1)(ii) for the purposes of this subpart. If the control device used to comply with this section is also used to comply with §§ 63.1315 through 63.1330, the performance test required for these sections is acceptable for demonstrating compliance with § 63.119(e) for the purposes of this subpart. The owner or operator is not required to prepare a design evaluation for the control device as described in § 63.120(d)(1)(i) for the purposes of this subpart if the performance test meets the criteria specified in § 63.120(d)(1)(ii)(A) and (d)(1)(ii)(B).

(8) When the term “operating range” is used in § 63.120(d)(3), the term “level” shall apply instead, for the purposes of this subpart. This level shall be established using the procedures specified in § 63.1334.

(9) When the Notification of Compliance Status requirements contained in § 63.152(b) are referred to in §§ 63.120, 63.122, and 63.123, the Notification of Compliance Status requirements contained in § 63.1335(e)(5) shall apply for the purposes of this subpart.

(10) When the Periodic Report requirements contained in § 63.152(c) are referred to in §§ 63.120, 63.122, and 63.123, the Periodic Report requirements contained in § 63.1335(e)(6) shall apply for the purposes of this subpart.

(11) When other reports as required in § 63.152(d) are referred to in § 63.122, the reporting requirements contained in § 63.1335(e)(7) shall apply for the purposes of this subpart.

(12) When the Implementation Plan requirements contained in § 63.151(c) are referred to in § 63.120 and § 63.122, the owner or operator of an affected

source subject to this subpart need not comply for the purposes of this subpart.

(13) When the Initial Notification Plan requirements contained in § 63.151(b) are referred to in § 63.122, the owner or operator of an affected source subject to this subpart need not comply for the purposes of this subpart.

(14) When the determination of equivalence criteria in § 63.102(b) is referred to in § 63.121(a), the provisions in § 63.6(g) shall apply for the purposes of this subpart.

(15) When a performance test is required under the provisions of § 63.120(d)(1)(ii), the use of Method 18 or Method 25A, 40 CFR part 60, appendix A is allowed for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A shall comply with paragraphs (a)(15)(i) and (a)(15)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A shall be the single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A, 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(16) The compliance date for storage vessels at affected sources subject to the provisions of this section is specified in § 63.1311.

(b) Owners or operators of Group 1 storage vessels that belong to a new affected source producing SAN using a continuous process shall control emissions to the levels indicated in paragraphs (b)(1) and (b)(2) of this section.

(1) For storage vessels with capacities greater than or equal to 2,271 cubic meters (m³) containing a liquid mixture having a vapor pressure greater than or equal to 0.5 kilopascal (kPa) but less than 0.7 kPa, emissions shall be controlled by at least 90 percent relative to uncontrolled emissions.

(2) For storage vessels with capacities less than 151 m³ containing a liquid mixture having a vapor pressure greater than or equal to 10 kPa, emissions shall be controlled by at least 98

percent relative to uncontrolled emissions.

(c) Owners or operators of Group 1 storage vessels that belong to a new or existing affected source producing ASA/AMSAN shall control emissions by at least 98 percent relative to uncontrolled emissions.

(d) The provisions of this subpart do not apply to storage vessels containing ethylene glycol at existing or new affected sources and storage vessels containing styrene at existing affected sources.

§ 63.1315 Continuous process vents provisions.

(a) Except as provided in paragraphs (b) through (d) of this section, the owner or operator of continuous process vents shall comply with the requirements of §§ 63.113 through 63.118, with the differences noted in paragraphs (a)(1) through (a)(15) of this section for the purposes of this subpart.

(1) When the term "process vent" is used in §§ 63.113 through 63.118, apply the term "continuous process vent," and the definition of this term in § 63.1312 shall apply for the purposes of this subpart.

(2) When the term "Group 1 process vent" is used in §§ 63.113 through 63.118, apply the term "Group 1 continuous process vent," and the definition of this term in § 63.1312 shall apply for the purposes of this subpart.

(3) When the term "Group 2 process vent" is used in §§ 63.113 through 63.118, apply the term "Group 2 continuous process vent," and the definition of this term in § 63.1312 shall apply for the purposes of this subpart.

(4) When December 31, 1992, (i.e., subpart G of this part proposal date) is referred to in § 63.113, apply the date March 29, 1995 (i.e., proposal date for this subpart) for the purposes of this subpart.

(5) When § 63.151(f), alternative monitoring parameters, and § 63.152(e), submission of an operating permit, are referred to in §§ 63.114(c) and 63.117(e), § 63.1335(f), alternative monitoring parameters, and § 63.1335(e)(8), submission of an operating permit, respectively, shall apply for the purposes of this subpart.

(6) When the Notification of Compliance Status requirements contained in § 63.152(b) are referred to in §§ 63.114, 63.117, and 63.118, the Notification of Compliance Status requirements contained in § 63.1335(e)(5) shall apply for the purposes of this subpart.

(7) When the Periodic Report requirements contained in § 63.152(c) are referred to in §§ 63.117 and 63.118, the Periodic Report requirements contained in § 63.1335(e)(6) shall apply for the purposes of this subpart.

(8) When the definition of excursion in § 63.152(c)(2)(ii)(A) is referred to in § 63.118(f)(2), the definition of excursion in § 63.1334(f) of this subpart shall apply for the purposes of this subpart.

(9) Owners and operators shall comply with § 63.1334, parameter monitoring levels and excursions, instead of § 63.114(e) for the purposes of this subpart. When the term “range” is used in §§ 63.117 and 63.118, the term “level” shall be used instead for the purposes of this subpart. This level is determined in accordance with § 63.1334.

(10) If a batch process vent is combined with a continuous process vent prior to being routed to a control device, the combined vent stream shall comply with either paragraph (a)(10)(i) or (a)(10)(ii) of this section, as appropriate.

(i) If the continuous process vent is a Group 1 continuous process vent, the combined vent stream shall comply with all requirements for a Group 1 continuous process vent stream in §§ 63.113 through 63.118, with the differences noted in paragraphs (a)(1) through (a)(9) of this section, for the purposes of this subpart.

(ii) If the continuous process vent is a Group 2 continuous process vent, the total resource effectiveness (TRE) index value for the combined vent stream shall be calculated at the exit of any recovery device and prior to the control device at maximum representative operating conditions. For combined vent streams containing continuous and batch process vents, the maximum representative operating conditions shall be during periods when batch emission episodes are venting to the control device, resulting in the highest concentration of organic HAP in the combined vent stream.

(11) If a batch process vent is combined with a continuous process vent prior to being routed to a recovery device, the TRE index value for the combined vent stream shall be calculated at the exit of the recovery device at maximum representative operating conditions for the purposes of this subpart. For combined vent streams containing continuous and batch process vents, the maximum representative operating conditions shall be during periods when batch emission episodes are venting to the recovery device, resulting in the highest concentration of organic HAP in the combined vent stream.

(12) When reports of process changes are required under § 63.118 (g), (h), (i), and (j), paragraphs (a)(12)(i) through (a)(12)(iv) of this section shall apply for the purposes of this subpart.

(i) For the purposes of this subpart, whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 continuous process vent to become a Group 1 continuous process vent, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(A) A description of the process change; and

(B) A schedule for compliance with the provisions of this subpart, as required under § 63.1335(e)(6)(iii)(D)(2).

(ii) Whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent with a TRE greater than 4.0 to become a Group 2 process vent with a TRE less than 4.0, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(A) A description of the process change; and

(B) A schedule for compliance with the provisions of this subpart, as required under § 63.1335(e)(6)(iii)(D)(2).

(iii) Whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute to become a Group 2 process vent with a flow rate of 0.005 standard cubic meter per minute or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(A) A description of the process change; and

(B) A schedule for compliance with the provisions of this subpart, as required under § 63.1335(e)(6)(iii)(D)(2).

(iv) Whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent with an organic HAP concentration less than 50 parts per million by volume to become a Group 2 process vent with an organic HAP concentration of 50 parts per million by volume or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(A) A description of the process change; and

(B) A schedule for compliance with the provisions of this subpart, as required under § 63.1335(e)(6)(iii)(D)(2).

(13) When the provisions of § 63.116(c)(3) and (c)(4) specify that Method 18, 40 CFR part 60, appendix A shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A may be used for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A shall comply with paragraphs (a)(13)(i) and (a)(13)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A shall be the single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A, 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(14) When the provisions of § 63.116(b) identify conditions under which a performance test is not required, for purposes of this subpart, the exemption in paragraph (a)(14)(i) shall also apply. Further, if a performance test meeting the conditions specified in paragraph (a)(14)(ii) of this section has been conducted by the owner or operator, the results of said performance test may be submitted and a performance test, as required by this section, is not required.

(i) An incinerator burning hazardous waste for which the owner or operator complies with the requirements of 40 CFR part 264, subpart O.

(ii) Performance tests done for other subparts in 40 CFR part 60 or part 63 where total organic HAP or TOC was measured, provided the owner or operator can demonstrate that operating conditions for the process and control or recovery device during the performance test are representative of current operating conditions.

(15) The compliance date for continuous process vents subject to the provisions of this section is specified in § 63.1311.

(b) Existing affected sources producing MBS shall comply with either paragraph (b)(1) or (b)(2) of this section.

(1) Comply with paragraph (a) of this section, as specified in paragraphs (b)(1)(i) and (b)(1)(ii).

(i) As specified in § 63.1312, Group 1 continuous process vents at MBS existing affected sources are those with a total resource effectiveness value less than or equal to 3.7.

(ii) When complying with this paragraph (b), the term "TRE of 4.0", or related terms indicating a TRE value of 4.0, referred to in § 63.113 through § 63.118 shall be replaced with "TRE of

6.7,” for the purposes of this subpart. The TRE range of 3.7 to 6.7 for continuous process vents at existing affected sources producing MBS corresponds to the TRE range of 1.0 to 4.0 for other continuous process vents, as it applies to monitoring, recordkeeping, and reporting.

(2) Not allow organic HAP emissions from the collection of continuous process vents at the affected source to be greater than 0.000590 kg organic HAP/Mg of product. Compliance with this paragraph (b)(2) shall be determined using the procedures specified in § 63.1333(b).

(c) New affected sources producing SAN using a batch process shall comply with the applicable requirements in § 63.1321.

(d) Affected sources producing PET or polystyrene using a continuous process are subject to the emissions control provisions of § 63.1316, the monitoring provisions of § 63.1317, the testing and compliance demonstration provisions of § 63.1318, the recordkeeping provisions of § 63.1319, and the reporting provisions of § 63.1320.

§ 63.1316 PET and polystyrene continuous process affected sources—emissions control provisions.

(a) The owner or operator of an affected source producing PET using a continuous process shall comply with paragraph (b) of this section. The owner or operator of an affected source producing polystyrene using a continuous process shall comply with paragraph (c) of this section.

(b) Each owner or operator of an affected source producing PET using a continuous process shall comply with the requirements specified in paragraphs (b)(1) or (b)(2) of this section, as appropriate, and not with any of the requirements specified in 40 CFR part 60, subpart DDD. Compliance can be based on either organic HAP or TOC.

(1) Each owner or operator of an affected source producing PET using a continuous dimethyl terephthalate process shall comply with paragraphs (b)(1)(i) through (b)(1)(iv) of this section.

(i) For existing affected sources with organic HAP emissions from continuous process vents in the collection of

material recovery sections (i.e., methanol recovery) within the affected source greater than 0.12 kg organic HAP/Mg of product, as determined by the procedure specified in § 63.1318(b) and for all new affected sources, limit organic HAP emissions from continuous process vents in the collection of material recovery sections within the affected source by complying with one of the following:

(A) Not allow emissions to be greater than 0.018 kg organic HAP/Mg of product; or

(B) Not allow the outlet gas stream temperature from each final condenser in a material recovery section to exceed +3° C (+37° F).

(ii) Limit organic HAP emissions from the continuous process vents in the collection of polymerization reaction sections within the affected source (including emissions from any equipment used to further recover ethylene glycol, but excluding emissions from process contact cooling towers) to 0.02 kg organic HAP/Mg of product or less.

(iii) Limit organic HAP emissions from continuous process vents not included in a material recovery section, as specified in paragraph (b)(1)(i) of this section, or not included in a polymerization reaction section, as specified in paragraph (b)(1)(ii) of this section, by complying with § 63.1315.

(iv) Limit organic HAP emissions from all batch process vents by complying with § 63.1321.

(2) Each owner or operator of an affected source producing PET using a continuous terephthalic acid process shall comply with paragraphs (b)(2)(i) through (b)(2)(iv) of this section.

(i) Limit organic HAP emissions from the continuous process vents associated with the esterification vessels in the collection of raw materials preparation sections within the affected source to 0.04 kg organic HAP/Mg of product or less. Limit organic HAP emissions associated with other continuous process vents in the collection of raw materials preparation sections within the affected source by complying with § 63.1315.

(ii) Limit organic HAP emissions from the continuous process vents in the collection of polymerization reaction sections within the affected source

(including emissions from any equipment used to further recover ethylene glycol, but excluding emissions from process contact cooling towers) to 0.02 kg organic HAP/Mg of product or less.

(iii) Limit organic HAP emissions from continuous process vents not included in a raw materials preparation section, as specified in paragraphs (b)(2)(i) of this section, or not included in a polymerization reaction section, as specified in paragraph (b)(2)(ii) of this section, by complying with § 63.1315.

(iv) Limit organic HAP emissions from all batch process vents by complying with § 63.1321.

(c) Each owner or operator of an affected source producing polystyrene resin using a continuous process shall comply with the requirements specified in paragraphs (c)(1) through (c)(3) of this section, as appropriate, and not with any of the requirements specified in 40 CFR part 60, subpart DDD. Compliance can be based on either organic HAP or TOC.

(1) Limit organic HAP emissions from continuous process vents in the collection of material recovery sections within the affected source by complying with one of the following:

(i) Not allow emissions to be greater than 0.0036 kg organic HAP/Mg of product;

(ii) Not allow the outlet gas stream temperature from each final condenser in a material recovery section to exceed -25°C (-13°F); or

(iii) Comply with one of the following:

(A) Reduce emissions by 98 weight percent or to a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the emissions;

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hr or greater by introducing the emissions into the flame zone of the boiler or process heater; or

(C) Combust the emissions in a flare that complies with the requirements of § 63.11(b).

(2) Limit organic HAP emissions from continuous process vents not included in a material recovery section, as specified in paragraph (c)(1)(i) of this section, by complying with § 63.1315.

(3) Limit organic HAP emissions from all batch process vents by complying with § 63.1321.

§ 63.1317 PET and polystyrene continuous process affected sources—monitoring provisions.

Continuous process vents using a control or recovery device to comply with § 63.1316 shall comply with the applicable monitoring provisions specified for continuous process vents in § 63.1315(a), except as specified in paragraphs (a) and (b) of this section.

(a) For the purposes of paragraph (a) of this section, owners or operators shall ignore references to group determinations (i.e., total resource effectiveness) and are not required to comply with § 63.113.

(b) The monitoring period for condenser exit temperature when complying with § 63.1316(b)(1)(i)(B) or § 63.1316(c)(1)(ii) shall be each consecutive 3-hour continuous period (e.g., 6 am to 9 am, 9 am to 12 pm). Each owner or operator shall designate said monitoring period in the Notification of Compliance Status required by § 63.1335(e)(5).

§ 63.1318 PET and polystyrene continuous process affected sources—testing and compliance demonstration provisions.

(a) Except as specified in paragraphs (b) through (d) of this section, continuous process vents using a control or recovery device to comply with § 63.1316 shall comply with the applicable testing and compliance provisions for continuous process vents specified in § 63.1315, except that, for the purposes of this paragraph (a), owners or operators shall ignore references to group determination (i.e., total resource effectiveness) and are not required to comply with § 63.113.

(b) *PET Affected Sources Using a Dimethyl Terephthalate Process—Applicability Determination Procedure.* Owners

or operators shall calculate organic HAP emissions from the collection of material recovery sections at an existing affected source producing PET using a continuous dimethyl terephthalate process to determine whether § 63.1316(a)(1)(i) is applicable using the procedures specified in either paragraph (b)(1) or (b)(2) of this section.

(1) Use Equation 1 of this subpart to determine mass emissions per mass product as specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

$$ER = \sum_{i=1}^n \frac{E_i}{(0.001 P_p)} \quad [\text{Eq. 1}]$$

where:

ER=Emission rate of total organic HAP or TOC, kg/Mg product.

E_i=Emission rate of total organic HAP or TOC in continuous process vent i, kg/hr.

P_p=The rate of polymer produced, kg/hr.

n=Number of continuous process vents in the collection of material recovery sections at the affected source.

0.001=Conversion factor, kg to Mg.

(i) The mass emission rate for each continuous process vent, E_i, shall be determined according to the procedures specified in § 63.116(c)(4). The sampling site for determining whether § 63.1316(a)(1)(i) is applicable shall be before any add-on control devices (i.e., those required by regulation) and after those recovery devices installed as part of operating the material recovery section. When the provisions of § 63.116(c)(4) specify that Method 18, 40 CFR part 60, appendix A shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A may be used for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A shall comply with paragraphs (b)(1)(i)(A) and (b)(1)(i)(B) of this section.

(A) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A shall be the single organic HAP representing the largest percent by volume of the emissions.

(B) The use of Method 25A, 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration

gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(ii) The rate of polymer produced, P_p (kg/hr), shall be determined by dividing the weight (kg) of polymer pulled from the process line during the performance test by the number of hours taken to perform the performance test. The weight of polymer pulled shall be determined by direct measurement or by an alternate methodology, such as materials balance. If an alternate methodology is used, a description of the methodology, including all procedures, data, and assumptions shall be submitted as part of the Notification of Compliance Status required by § 63.1335(e)(5).

(2) Use engineering assessment, as described in § 63.1323(b)(6)(i), to demonstrate that mass emissions per mass product are less than or equal to 0.07 kg organic HAP/Mg product. If engineering assessment shows that mass emissions per mass product are greater than 0.07 kg organic HAP/Mg product and the owner or operator wishes to demonstrate that mass emissions per mass product are less than the threshold emission rate of 0.12 kg organic HAP/Mg product, the owner or operator shall use the procedures specified in paragraph (b)(1) of this section.

(c) *Compliance with Mass Emissions per Mass Product Standards.* Owners or operators complying with § 63.1316(b)(1)(i)(A), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), and (c)(1)(i) shall demonstrate compliance with the mass emissions per mass product requirements using the procedures specified in paragraph (b)(1) of this section, except that the sampling site specified in paragraph (b)(1)(i) of this section shall be at the outlet of the last control or recovery device.

(d) *Compliance with Temperature Limits for Final Condensers.* Owners or operators complying with § 63.1316(b)(1)(i)(B) or § 63.1316(c)(1)(ii) shall perform an initial performance test as specified in paragraph (d)(1) of this section to demonstrate initial compliance with the temperature limit requirements and shall demonstrate continuous compliance as specified in paragraph (d)(2) of this section.

(1) Using the temperature monitoring device specified by the applicable monitoring provisions specified for continuous process vents in § 63.1315, an average exit temperature shall be determined based on the average exit temperature for three performance tests. The average exit temperature for each 3-hour performance test shall be based on measurements taken at least every 15 minutes for 3 hours of continuous operation under maximum representative operating conditions for the process. For emissions streams containing continuous and batch process vents, the maximum representative operating conditions shall be during periods when batch emission episodes are venting to the control device resulting in the highest concentration of organic HAP in the emissions stream.

(2) As specified in § 63.1317(b), continuous compliance shall be determined based on an average exit temperature determined for each consecutive 3-hour continuous period. Each 3-hour period where the average exit temperature is more than 6 °C (10 °F) above the applicable specified temperature limit shall be considered an exceedance of the monitoring provisions.

§ 63.1319 PET and polystyrene continuous process affected sources—recordkeeping provisions.

(a) Except as specified in paragraphs (b) and (c) of this section, owners or operators using a control or recovery device to comply with § 63.1316 shall comply with the applicable recordkeeping provisions specified in § 63.1315, except that, for the purposes of this paragraph (a), owners or operators shall ignore references to group determinations (i.e., total resource effectiveness) and are not required to comply with § 63.113.

(b) *Records Demonstrating Compliance With the Applicability Determination Procedure for PET Affected Sources Using a Dimethyl Terephthalate Process.* Each owner or operator, as appropriate, shall keep the following data, as appropriate, up-to-date and readily accessible:

(1) Results of the mass emissions per mass product calculation specified in § 63.1318(b).

(2) If complying with § 63.1316 by demonstrating that mass emissions per mass product are less than or equal to the level specified in § 63.1316(a)(1)(i), the information specified in paragraphs (b)(2)(i) and (b)(2)(ii) of this section.

(i) Each process operation variable (e.g., pressure, temperature, type of catalyst) that may result in an increase in the mass emissions per mass product should said variable be changed.

(ii) Records of any change in process operation that increases the mass emissions per mass product.

(c) *Records Demonstrating Compliance with Temperature Limits for Final Condensers.* Owners or operators of continuous process vents complying with § 63.1316(b)(1)(i)(B) or § 63.1316(c)(1)(ii) shall keep the following data, as appropriate, up-to-date and readily accessible:

(1) Records of monitoring data as specified in § 63.1315, except that the monitoring period shall be each consecutive 3-hour continuous period.

(2) Results of the performance test specified in § 63.1318(d)(1) and any other performance test that may be subsequently required.

§ 63.1320 PET and polystyrene continuous process affected sources—reporting provisions.

(a) Except as specified in paragraphs (b) and (c) of this section, owners and operators using a control or recovery device to comply with § 63.1316 shall comply with the applicable reporting provisions specified in § 63.1315, except that, for the purposes of this paragraph (a), owners or operators shall ignore references to group determinations (i.e., total resource effectiveness) and are not required to comply with § 63.113.

(b) *Reporting for PET Affected Sources Using a Dimethyl Terephthalate Process.* Each owner or operator complying with § 63.1316 by demonstrating that mass emissions per mass product are less than or equal to the level specified in § 63.1316(a)(1)(i) shall comply with paragraphs (b)(1) through (b)(3) of this section.

(1) Include the information specified in § 63.1319(b)(2)(ii) in each Periodic Report, required by § 63.1335(e)(6), as appropriate.

(2) Include the information specified in § 63.1319 (b)(1) or (b)(2) in the Notification of Compliance Status, required by § 63.1335(e)(5), for the initial determination and in the appropriate Periodic Report, required by § 63.1335(e)(6), for any subsequent determinations that may be required.

(3) Whenever a process change, as defined in § 63.115(e), is made that causes emissions from continuous process vents in the collection of material recovery sections (i.e., methanol recovery) within the affected source to be greater than 0.12 kg organic HAP/Mg of product, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(i) A description of the process change; and

(ii) A schedule for compliance with the provisions of this subpart, as required under § 63.1335(e)(6)(iii)(D)(2).

(c) *Reporting for Affected Sources Complying With Temperature Limits for Final Condensers.* Each owner or operator complying with § 63.1316(b)(1)(i)(B) or § 63.1316(c)(1)(ii) shall comply with paragraphs (c)(1) and (c)(2) of this section.

(1) Report periods when the 3-hour average exit temperature is more than 6° C (10° F) above the applicable specified temperature limit in each Periodic Report, required by § 63.1335(e)(6), as appropriate.

(2) Include the information specified in § 63.1319(c)(2) in the Notification of Compliance Status, required by § 63.1335(e)(5), for the initial performance test and in the appropriate Periodic Report, required by § 63.1335(e)(6), for any subsequent performance tests that may be required.

(3) Include the information specified in § 63.1317(b) in the Notification of Compliance Status, required by § 63.1335(e)(5).

§ 63.1321 Batch process vents provisions.

(a) *Batch process vents.* Except as specified in paragraphs (b) and (c) of this section, owners and operators of new and existing affected sources with batch process vents shall comply with the requirements in §§ 63.1322 through 63.1327. The batch process vent group status shall be determined in accordance with § 63.1323. Batch process vents classified as Group 1 shall comply with the reference control technology requirements for Group 1 batch process vents in § 63.1322, the monitoring requirements in § 63.1324, the performance test methods and procedures to determine compliance requirements in § 63.1325, the recordkeeping requirements in § 63.1326, and the reporting requirements in § 63.1327. All Group 2 batch process vents shall comply with the applicable reference control technology requirements in § 63.1322, the recordkeeping requirements in § 63.1326, and the reporting requirements in § 63.1327.

(b) *New SAN batch affected sources.* Owners and operators of new SAN affected sources using a batch process shall comply with the requirements of § 63.1322 through § 63.1327 for batch process vents and aggregate batch vent streams except as specified in paragraphs (b)(1) through (b)(2) of this section. For continuous process vents, owners and operators shall comply with the requirements of § 63.1322 through § 63.1327 except as specified in paragraph (b)(3) of this section.

(1) For batch process vents, the determination of group status (i.e., Group 1/Group 2) under § 63.1323 is not required.

(2) For batch process vents and aggregate batch vent streams, the control requirements for individual batch process vents or aggregate batch vent streams (e.g., 90 percent emission reduction) as specified in § 63.1322(a)(1), (a)(2), (b)(1), and (b)(2) shall not apply.

(3) Continuous process vents using a control or recovery device to comply with § 63.1322(a)(3) are subject to the applicable requirements in § 63.1315(a), as appropriate, except as specified in paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(i) Said continuous process vents are not subject to the group determination procedures of § 63.115 for the purposes of this subpart.

(ii) Said continuous process vents are not subject to the reference control technology provisions of § 63.113 for the purposes of this subpart.

(c) *Aggregate batch vent streams.* Aggregate batch vent streams, as defined in § 63.1312, are subject to the control requirements for individual batch process vents, as specified in § 63.1322(b), as well as the monitoring, testing, record-keeping, and reporting requirements specified in § 63.1324 through § 63.1327.

§ 63.1322 Batch process vents—reference control technology.

(a) *Batch process vents.* The owner or operator of a Group 1 batch process vent, as determined using the procedures in § 63.1323, shall comply with the requirements of either paragraph (a)(1) or (a)(2) of this section, except as provided for in paragraph (a)(3) of this section. Compliance can be based on either organic HAP or TOC.

(1) For each batch process vent, reduce organic HAP emissions using a flare.

(i) The flare shall comply with the requirements of § 63.11(b).

(ii) Halogenated batch process vents, as defined in § 63.1312, shall not be vented to a flare.

(2) For each batch process vent, reduce organic HAP emissions for the batch cycle by 90 weight percent using a control device. Owners or operators may achieve compliance with this paragraph (a)(2) through the control of selected batch emission episodes or the control of portions of selected batch emission episodes. Documentation demonstrating how the 90 weight percent emission reduction is achieved is required by § 63.1325(c)(2).

(3) The owner or operator of a new affected source producing SAN using a batch process shall reduce organic HAP emissions from the collection of batch process vents, aggregate batch vent streams, and continuous process vents by 84 weight percent. Compliance with this paragraph (a)(3) shall be demonstrated using the procedures specified in § 63.1333(c).

(b) *Aggregate batch vent streams.* The owner or operator of an aggregate batch vent stream that contains one or more Group 1 batch process vents shall comply with the requirements of either paragraph (b)(1) or (b)(2) of this section, except as provided for in paragraph (b)(3) of this section. Compliance can be based on either organic HAP or TOC.

(1) For each aggregate batch vent stream, reduce organic HAP emissions using a flare.

(i) The flare shall comply with the requirements of § 63.11(b).

(ii) Halogenated aggregate batch vent streams, as defined in § 63.1312, shall not be vented to a flare.

(2) For each aggregate batch vent stream, reduce organic HAP emissions by 90 weight percent on a continuous basis using a control device.

(3) The owner or operator of a new affected source producing SAN using a batch process shall comply with paragraph (a)(3) of this section.

(c) *Halogenated emissions.* Halogenated Group 1 batch process vents, halogenated aggregate batch vent streams, and halogenated continuous process vents that are combusted as part of complying with paragraph (a)(2), (a)(3), (b)(2), or (b)(3) of this section, as appropriate, shall be controlled according to either paragraph (c)(1) or (c)(2) of this section.

(1) If a combustion device is used to comply with paragraph (a)(2), (a)(3), (b)(2), or (b)(3) of this section for a halogenated batch process vent, halogenated aggregate batch vent stream, or halogenated continuous process vent, said emissions shall be ducted from the combustion device to an additional control device that reduces overall emissions of hydrogen halides and halogens by 99 percent before said emissions are discharged to the atmosphere.

(2) A control device may be used to reduce the halogen atom mass emission rate of said emissions to less than 3,750 kg/yr for batch process vents or aggregate batch vent streams and to less than 0.45 kilograms per hour for continuous process vents prior to venting to any combustion control device, and

thus make the batch process vent, aggregate batch vent stream, or continuous process vent nonhalogenated. The nonhalogenated batch process vent, aggregate batch vent stream, or continuous process vent must then comply with the requirements of either paragraph (a) or (b) of this section, as appropriate.

(d) If a boiler or process heater is used to comply with the percent reduction requirement specified in paragraph (a)(2), (a)(3), (b)(2), or (b)(3) of this section, the batch process vent, aggregate batch vent stream, or continuous process vent shall be introduced into the flame zone of such a device.

(e) *Combination of batch process vents or aggregate batch vent streams with continuous process vents.* A batch process vent or aggregate batch vent stream combined with a continuous process vent is not subject to the provisions of §§ 63.1323 through 63.1327, providing the requirements of paragraphs (e)(1), (e)(2), and either (e)(3) or (e)(4) of this section are met.

(1) The batch process vent or aggregate batch vent stream is combined with a continuous process vent prior to routing the continuous process vent to a control or recovery device. In this paragraph (e)(1), the definitions of control device and recovery device as they relate to continuous process vents shall be used.

(2) The only emissions to the atmosphere from the batch process vent or aggregate batch vent stream prior to being combined with the continuous process vent are from equipment subject to and in compliance with § 63.1331.

(3) If the batch process vent or aggregate batch vent stream is combined with a continuous process vent prior to being routed to a control device, the combined vent stream shall comply with the requirements in § 63.1315(a)(10). In this paragraph (e)(3), the definition of control device as it relates to continuous process vents shall be used.

(4) If the batch process vent or aggregate batch vent stream is combined with a continuous process vent prior to being routed to a recovery device, the combined vent stream shall comply with the requirements in

§ 63.1315(a)(11). In this paragraph (e)(4), the definition of recovery device as it relates to continuous process vents shall be used.

(f) *Group 2 batch process vents with annual emissions greater than or equal to the level specified in § 63.1323(d).* The owner or operator of a Group 2 batch process vent with annual emissions greater than or equal to the level specified in § 63.1323(d) shall comply with the provisions of (f)(1) and (f)(2) of this section.

(1) Establish a batch cycle limitation that ensures the Group 2 batch process vent does not become a Group 1 batch process vent.

(2) Comply with the recordkeeping requirements in § 63.1326(d)(2), and the reporting requirements in § 63.1327(a)(3) and (b).

(g) *Group 2 batch process vents with annual emissions less than the level specified in § 63.1323(d).* The owner or operator of a Group 2 batch process vent with annual emissions less than the level specified in § 63.1323(d) shall comply with either paragraphs (g)(1) and (g)(2) of this section or with paragraphs (f)(1) and (f)(2) of this section.

(1) Establish a batch cycle limitation that ensures emissions do not exceed the level specified in § 63.1323(d).

(2) Comply with the recordkeeping requirements in § 63.1326(d)(1), and the reporting requirements in § 63.1327(a)(2), (b), and (c).

§ 63.1323 Batch process vents—methods and procedures for group determination.

(a) *General requirements.* Except as provided in paragraph (a)(3) of this section and in § 63.1321(b)(1), the owner or operator of batch process vents at affected sources shall determine the group status of each batch process vent in accordance with the provisions of this section. This determination may be based on either organic HAP or TOC emissions.

(1) The procedures specified in paragraphs (b) through (h) of this section shall be followed for the expected mix of products for a given batch process vent, as specified in paragraph (a)(1)(i) of this section, or for the worst-case HAP emitting product, as specified in paragraphs (a)(1)(ii) through (a)(1)(iv)

of this section. "Worst-case HAP emitting product" is defined in paragraph (a)(1)(iii) of this section.

(i) If an owner or operator chooses to follow the procedures specified in paragraphs (b) through (h) of this section for the expected mix of products, an identification of the different products and the number of batch cycles accomplished for each is required as part of the group determination documentation, as specified in § 63.1326(a)(1).

(ii) If an owner or operator chooses to follow the procedures specified in paragraphs (b) through (h) of this section for the worst-case HAP emitting product, documentation identifying the worst-case HAP emitting product is required as part of the group determination documentation, as specified in § 63.1326(a)(1).

(iii) Except as specified in paragraph (a)(1)(iii)(B) of this section, the worst-case HAP emitting product is as defined in paragraph (a)(1)(iii)(A) of this section.

(A) The worst-case HAP emitting product is the one with the highest mass emission rate (kg organic HAP per hour) averaged over the entire time period of the batch cycle.

(B) Alternatively, when one product is produced more than 75 percent of the time, accounts for more than 75 percent of the annual mass of product, and the owner or operator can show that the mass emission rate (kg organic HAP per hour) averaged over the entire time period of the batch cycle can reasonably be expected to be similar to the mass emission rate for other products having emissions from the same batch process vent, said product may be considered the worst-case HAP emitting product.

(C) An owner or operator shall determine the worst-case HAP emitting product for a batch process vent as specified in paragraphs (a)(1)(iii)(C)(1) through (a)(1)(iii)(C)(3) of this section.

(1) The emissions per batch emission episode shall be determined using any of the procedures specified in paragraph (b) of this section. The mass emission rate (kg organic HAP per hour) averaged over the entire time period of the batch cycle shall be determined by summing the emissions for each batch emission episode making up

a complete batch cycle and dividing by the total duration in hours of the batch cycle.

(2) To determine the worst-case HAP emitting product as specified under paragraph (a)(1)(iii)(A) of this section, the mass emission rate for each product shall be determined and compared.

(3) To determine the worst-case HAP emitting product as specified under paragraph (a)(1)(iii)(B) of this section, the mass emission rate for the product meeting the time and mass criteria of paragraph (a)(1)(iii)(B) of this section shall be determined, and the owner or operator shall provide adequate information to demonstrate that the mass emission rate for said product is similar to the mass emission rates for the other products having emissions from the same batch process vent. In addition, the owner or operator shall provide information demonstrating that the selected product meets the time and mass criteria of paragraph (a)(1)(iii)(B) of this section.

(iv) The annual production of the worst-case HAP emitting product shall be determined by ratioing the production time of said product up to a 12 month period of actual production. It is not necessary to ratio up to a maximum production rate (i.e., 8,760 hours per year at maximum design production).

(2) The annual uncontrolled organic HAP or TOC emissions and average flow rate shall be determined at the exit from the batch unit operation. For the purposes of these determinations, the primary condenser operating as a reflux condenser on a distillation column, the primary condenser recovering monomer or solvent from a batch stripping operation, and the primary condenser recovering monomer or solvent from a batch distillation operation shall be considered part of the batch unit operation. All other devices that recover or oxidize organic HAP or TOC vapors shall be considered control devices as defined in § 63.1312.

(3) The owner or operator of a batch process vent complying with the flare provisions in § 63.1322(a)(1) or § 63.1322(b)(1) or routing the batch process vent to a control device to comply with the requirements in § 63.1322(a)(2)

or § 63.1322(b)(2) is not required to perform the batch process vent group determination described in this section, but shall comply with all requirements applicable to Group 1 batch process vents for said batch process vent.

(b) *Determination of annual emissions.* The owner or operator shall calculate annual uncontrolled TOC or organic HAP emissions for each batch process vent using the methods described in paragraphs (b)(1) through (b)(8) of this section. Paragraphs (b)(1) through (b)(4) of this section present procedures that can be used to calculate the emissions from individual batch emission episodes. Emissions from batch processes involving multicomponent systems are to be calculated using the procedures in paragraphs (b)(1) through (b)(4) of this section. Individual HAP partial pressures in multicomponent systems shall be determined by the following methods: If the components are miscible in one another, use Raoult's law to calculate the partial pressures; if the solution is a dilute aqueous mixture use Henry's law constants to calculate partial pressures; if Raoult's law or Henry's law are not appropriate (or available) use experimentally obtained activity coefficients, Henry's law constants, or solubility data; if Raoult's law or Henry's law are not appropriate use models, such as the group-contribution models, to predict activity coefficients; and if Raoult's law or Henry's law are not appropriate assume the

components of the system behave independently and use the summation of all vapor pressures from the HAP's as the total HAP partial pressure. Chemical property data can be obtained from standard reference texts. Paragraph (b)(5) of this section describes how direct measurement can be used to estimate emissions. If the owner or operator can demonstrate that the procedures in paragraphs (b)(1) through (b)(4) of this section are not appropriate to estimate emissions from a batch emission episode, emissions may be estimated using engineering assessment, as described in paragraph (b)(6) of this section. Owners or operators are not required to demonstrate that direct measurement is not appropriate before utilizing engineering assessment. Paragraph (b)(6)(ii) of this section describes how an owner or operator shall demonstrate that the procedures in paragraphs (b)(1) through (b)(4) of this section are not appropriate. Emissions from a batch cycle shall be calculated in accordance with paragraph (b)(7) of this section, and annual emissions from the batch process vent shall be calculated in accordance with paragraph (b)(8) of this section.

(1) TOC or organic HAP emissions from the purging of an empty vessel shall be calculated using Equation 2 of this subpart. Equation 2 of this subpart does not take into account evaporation of any residual liquid in the vessel.

$$E_{\text{episode}} = \frac{(V_{\text{ves}})(P)(MW_{\text{wavg}})}{RT} (1 - 0.37^m) \quad [\text{Eq. 2}]$$

where:

E_{episode} = Emissions, kg/episode.

V_{ves} = Volume of vessel, m^3 .

P = TOC or total organic HAP partial pressure, kPa.

MW_{wavg} = Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section, kg/kmol.

R = Ideal gas constant, $8.314 \text{ m}^3\delta\text{kPa}/\text{kmol}\delta\text{K}$.

T = Temperature of vessel vapor space, K.

m = Number of volumes of purge gas used.

(2) TOC or organic HAP emissions from the purging of a filled vessel shall be calculated using Equation 3 of this subpart.

$$E_{\text{episode}} = \frac{(y)(V_{\text{dr}})(P^2)(MW_{\text{wavg}})}{RT \left(P - \sum_{i=1}^n P_i x_i \right)} (T_m) \quad [\text{Eq. 3}]$$

where:

E_{episode} =Emissions, kg/episode.

y =Saturated mole fraction of all TOC or organic HAP in vapor phase.

V_{dr} =Volumetric gas displacement rate, m^3/min .

P =Pressure in vessel vapor space, kPa.

MW_{wavg} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(iii) of this section, kg/kmol.

R =Ideal gas constant, $8.314 \text{ m}^3\delta\text{kPa}/\text{kmol}\delta\text{K}$.

T =Temperature of vessel vapor space, K.

P_i =Vapor pressure of TOC or individual organic HAP i , kPa.

x_i =Mole fraction of TOC or organic HAP i in the liquid.

n =Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated.

T_m =Minutes/episode.

(3) Emissions from vapor displacement due to transfer of material into or out of a vessel shall be calculated using Equation 4 of this subpart.

$$E_{\text{episode}} = \frac{(y)(V)(P)(MW_{\text{wavg}})}{RT} \quad [\text{Eq. 4}]$$

where:

E_{episode} =Emissions, kg/episode.

y =Saturated mole fraction of all TOC or organic HAP in vapor phase.

V =Volume of gas displaced from the vessel, m^3 .

P =Pressure in vessel vapor space, kPa.

MW_{wavg} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(i)(D) of this section, kg/kmol.

R =Ideal gas constant, $8.314 \text{ m}^3\delta\text{kPa}/\text{kmol}\delta\text{K}$.

T =Temperature of vessel vapor space, K.

(4) Emissions caused by the heating of a vessel shall be calculated using the procedures in either paragraphs (b)(4)(i), (b)(4)(ii), or (b)(4)(iii) of this section, as appropriate.

(i) If the final temperature to which the vessel contents is heated is lower than 50 K below the boiling point of the HAP in the vessel, then emissions shall be calculated using the equations in paragraphs (b)(4)(i)(A) through (b)(4)(i)(D) of this section.

(A) Emissions caused by heating of a vessel shall be calculated using Equation 5 of this subpart. The assumptions made for this calculation are atmospheric pressure of 760 millimeters of mercury (mm Hg) and the displaced gas is always saturated with volatile organic compounds (VOC) vapor in equilibrium with the liquid mixture.

$$E_{\text{episode}} = \left[\frac{\frac{\sum_{i=1}^n (P_i)_{T1}}{101.325 - \sum_{i=1}^n (P_i)_{T1}} + \frac{\sum_{i=1}^n (P_i)_{T2}}{101.325 - \sum_{i=1}^n (P_i)_{T2}}}{2} \right] (\Delta^n) (MW_{\text{wavg}}) \quad [\text{Eq. 5}]$$

where:

E_{episode} =Emissions, kg/episode.

$(P_i)_{T1}$, $(P_i)_{T2}$ =Partial pressure (kPa) of TOC or each organic HAP i in the vessel headspace at initial ($T1$) and final ($T2$) temperature.

n =Number of organic HAP in stream.

Note: Summation not required if TOC emissions are being estimated.

Δ^n =Number of kilogram-moles (kg-moles) of gas displaced, determined in accordance with paragraph (b)(4)(i)(B) of this section.

101.325=Constant, kPa.

MW_{wavg} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(i)(D) of this section, kg/kmol.

(B) The moles of gas displaced, Δ^n , is calculated using Equation 6 of this subpart.

$$\Delta^n = \frac{V_{fs}}{R} \left[\left(\frac{Pa_1}{T_1} \right) - \left(\frac{Pa_2}{T_2} \right) \right] \quad [\text{Eq. 6}]$$

where:

Δ^n =Number of kg-moles of gas displaced.

V_{fs} =Volume of free space in the vessel, m^3 .

R =Ideal gas constant, $8.314 \text{ m}^3\delta\text{kPa}/\text{kmol}\delta\text{K}$.

Pa_1 =Initial noncondensable gas pressure in the vessel, kPa.

Pa_2 =Final noncondensable gas pressure, kPa.

T_1 =Initial temperature of vessel, K.

T_2 =Final temperature of vessel, K.

(C) The initial and final pressure of the noncondensable gas in the vessel shall be calculated using Equation 7 of this subpart.

$$Pa = 101.325 - \sum_{i=1}^n (P_i)_T \quad [\text{Eq. 7}]$$

where:

Pa =Initial or final partial pressure of noncondensable gas in the vessel headspace, kPa.

101.325=Constant, kPa.

$(P_i)_T$ =Partial pressure of TOC or each organic HAP i in the vessel headspace, kPa, at the initial or final temperature ($T1$ or $T2$).

n =Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated.

(D) The weighted average molecular weight of TOC or organic HAP in the displaced gas, MW_{wavg} , shall be calculated using Equation 8 of this subpart.

$$MW_{\text{wavg}} = \frac{\sum_{i=1}^n (\text{mass of C})_i (\text{molecular weight of C})_i}{\sum_{i=1}^n (\text{mass of C})_i} \quad [\text{Eq. 8}]$$

where:

C=TOC or organic HAP component

n=Number of TOC or organic HAP components in stream.

(ii) If the vessel contents are heated to a temperature greater than 50 K below the boiling point, then emissions from the heating of a vessel shall be calculated as the sum of the emissions calculated in accordance with paragraphs (b)(4)(ii)(A) and (b)(4)(ii)(B) of this section.

(A) For the interval from the initial temperature to the temperature 50 K below the boiling point, emissions shall be calculated using Equation 5 of this subpart, where T_2 is the temperature 50 K below the boiling point.

(B) For the interval from the temperature 50 K below the boiling point to the final temperature, emissions shall be calculated as the summation of emissions for each 5 K increment, where the emissions for each increment shall be calculated using Equation 5 of this subpart.

(1) If the final temperature of the heatup is lower than 5 K below the boiling point, the final temperature for the last increment shall be the final temperature for the heatup, even if the last increment is less than 5 K.

(2) If the final temperature of the heatup is higher than 5 K below the boiling point, the final temperature for the last increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.

(3) If the vessel contents are heated to the boiling point and the vessel is not operating with a condenser, the final temperature for the final increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.

(iii) If the vessel is operating with a condenser, and the vessel contents are heated to the boiling point, the pri-

mary condenser, as specified in paragraph (a)(2) of this section, is considered part of the process. Emissions shall be calculated as the sum of emissions calculated using Equation 5 of this subpart, which calculates emissions due to heating the vessel contents to the temperature of the gas existing the condenser, and emissions calculated using Equation 4 of this subpart, which calculates emissions due to the displacement of the remaining saturated noncondensable gas in the vessel. The final temperature in Equation 5 of this subpart shall be set equal to the exit gas temperature of the condenser. Equation 4 of this subpart shall be used as written below in Equation 4a of this subpart, using free space volume, and T is set equal to the condenser exit gas temperature.

$$E_{\text{episode}} = \frac{(y)(V_{\text{fs}})(P)(MW_{\text{wavg}})}{RT} \quad [\text{Eq. 4a}]$$

where:

E_{episode} =Emissions, kg/episode.

y =Saturated mole fraction of all TOC or organic HAP in vapor phase.

V_{fs} =Volume of the free space in the vessel, m^3 .

P =Pressure in vessel vapor space, kPa.

MW_{wavg} =Weighted average molecular weight of TOC or organic HAP in vapor, determined in accordance with paragraph (b)(4)(i)(D) of this section, kg/kmol.

R =Ideal gas constant, $8.314 \text{ m}^3\delta\text{kPa/kmol}\delta\text{K}$.

T =Temperature of condenser exit stream, K.

(5) The owner or operator may estimate annual emissions for a batch emission episode by direct measurement. If direct measurement is used, the owner or operator shall either perform a test for the duration of a representative batch emission episode or

perform a test during only those periods of the batch emission episode for which the emission rate for the entire episode can be determined or for which the emissions are greater than the average emission rate of the batch emission episode. The owner or operator choosing either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used provided the results are still relevant to the current batch process vent conditions. Performance tests shall follow the procedures specified in paragraphs (b)(5)(i) through (b)(5)(iii) of this section. The procedures in either paragraph (b)(5)(iv) or (b)(5)(v) of this section shall be used to calculate the emissions per batch emission episode.

(i) Method 1 or 1A, 40 CFR part 60, appendix A as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. No traverse is necessary when Method 2A or 2D, 40 CFR part 60, appendix A is used to determine gas stream volumetric flow rate.

(ii) Gas stream volumetric flow rate and/or average flow rate shall be determined as specified in paragraph (e) of this section.

(iii) Method 18 or Method 25A, 40 CFR part 60, appendix A, shall be used to determine the concentration of TOC or organic HAP, as appropriate. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part may be used. The use of Method 25A, 40 CFR part 60, appendix A shall comply with paragraphs (b)(5)(iii)(A) and (b)(5)(iii)(B) of this section.

(A) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A shall be the single organic HAP representing the largest percent by volume of the emissions.

(B) The use of Method 25A, 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(iv) If an integrated sample is taken over the entire batch emission episode to determine TOC or average total organic HAP concentration, emissions shall be calculated using Equation 9 of this subpart.

$$E_{\text{episode}} = K \left[\sum_{j=1}^n (C_j)(M_j) \right] \text{AFR}(T_h) \quad [\text{Eq. 9}]$$

where:

E_{episode} =Emissions, kg/episode.

K =Constant, 2.494×10^{-6} (ppmv) $^{-1}$ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20 °C.

C_j =Average concentration of TOC or sample organic HAP component j of the gas stream, dry basis, ppmv.

M_j =Molecular weight of TOC or sample organic HAP component j of the gas stream, gm/gm-mole.

AFR =Average flow rate of gas stream, dry basis, scmm.

T_h =Hours/episode.

n =Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated using a TOC concentration measured using Method 25A, 40 CFR part 60, appendix A.

(v) If grab samples are taken to determine TOC or average total organic HAP concentration, emissions shall be calculated according to paragraphs (b)(5)(v)(A) and (b)(5)(v)(B) of this section.

(A) For each measurement point, the emission rate shall be calculated using Equation 10 of this subpart.

$$E_{\text{point}} = K \left[\sum_{j=1}^n C_j M_j \right] \text{FR} \quad [\text{Eq. 10}]$$

where:

E_{point} =Emission rate for individual measurement point, kg/hr.

K =Constant, 2.494×10^{-6} (ppmv) $^{-1}$ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20 °C.

C_j =Concentration of TOC or sample organic HAP component j of the gas stream, dry basis, ppmv.

M_j =Molecular weight of TOC or sample organic HAP component j of the gas stream, gm/gm-mole.

FR =Flow rate of gas stream for the measurement point, dry basis, scmm.

n =Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated using a TOC concentration measured using Method 25A, 40 CFR part 60, appendix A.

(B) The emissions per batch emission episode shall be calculated using Equation 11 of this subpart.

$$E_{\text{episode}} = (\text{DUR}) \left[\sum_{i=1}^n \frac{E_i}{n} \right] \quad [\text{Eq. 11}]$$

where:

E_{episode} =Emissions, kg/episode.

DUR =Duration of the batch emission episode, hr/episode.

E_i =Emissions for measurement point i , kg/hr.

n =Number of measurements.

(6) If the owner or operator can demonstrate that the methods in paragraphs (b)(1) through (b)(4) of this section are not appropriate to estimate emissions for a batch emissions episode, the owner or operator may use engineering assessment to estimate emissions as specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section. All data, assumptions, and procedures used in an engineering assessment shall be documented.

(i) Engineering assessment includes, but is not limited to, the following:

(A) Previous test results, provided the tests are representative of current operating practices;

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions;

(C) Flow rate, TOC emission rate, or organic HAP emission rate specified or implied within a permit limit applicable to the batch process vent; and

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances;

(2) Estimation of flow rate based on physical equipment design such as pump or blower capacities; and

(3) Estimation of TOC or organic HAP concentrations based on saturation conditions.

(ii) The emissions estimation equations in paragraphs (b)(1) through (b)(4) of this section shall be considered inappropriate for estimating emissions for a given batch emissions episode if one or more of the criteria in paragraphs (b)(6)(ii)(A) through (b)(6)(ii)(B) of this section are met.

(A) Previous test data are available that show a greater than 20 percent discrepancy between the test value and the estimated value.

(B) The owner or operator can demonstrate to the Administrator that the emissions estimation equations are not appropriate for a given batch emissions episode.

(C) Data or other information supporting a finding that the emissions estimation equations are inappropriate as specified under paragraph (b)(6)(ii)(A) of this section shall be reported in the Notification of Compliance Status, as required in § 63.1335(e)(5).

(D) Data or other information supporting a finding that the emissions estimation equations are inappropriate as specified under paragraph (b)(6)(ii)(B) of this section shall be reported in the Precompliance Report, as required in § 63.1335(e)(3).

(7) For each batch process vent, the TOC or organic HAP emissions associated with a single batch cycle shall be calculated using Equation 12 of this subpart.

$$E_{\text{cycle}} = \sum_{i=1}^n E_{\text{episode}_i} \quad [\text{Eq. 12}]$$

where:

E_{cycle} = Emissions for an individual batch cycle, kg/batch cycle

E_{episode_i} = Emissions from batch emission episode i , kg/episode

n = Number of batch emission episodes for the batch cycle

(8) Annual TOC or organic HAP emissions from a batch process vent shall be calculated using Equation 13 of this subpart.

$$AE = \sum_{i=1}^n (N_i)(E_{\text{cycle}_i}) \quad [\text{Eq. 13}]$$

where:

AE = Annual emissions from a batch process vent, kg/yr.

N_i = Number of type i batch cycles performed annually, cycles/year

E_{cycle_i} = Emissions from the batch process vent associated with a single type i batch cycle, as determined in paragraph (b)(7) of this section, kg/batch cycle

n = Number of different types of batch cycles that cause the emission of TOC or organic HAP from the batch process vent

(c) [Reserved]

(d) *Minimum emission level exemption.*

A batch process vent with annual emissions less than 11,800 kg/yr is considered a Group 2 batch process vent and the owner or operator of said batch process vent shall comply with the requirements in § 63.1322 (f) or (g). The owner or operator of said batch process vent is not required to comply with the provisions in paragraphs (e) through (g) of this section.

(e) *Determination of average flow rate.* The owner or operator shall determine the average flow rate for each batch emission episode in accordance with one of the procedures provided in paragraphs (e)(1) through (e)(2) of this section. The annual average flow rate for a batch process vent shall be calculated as specified in paragraph (e)(3) of this section.

(1) Determination of the average flow rate for a batch emission episode by di-

rect measurement shall be made using the procedures specified in paragraphs (e)(1)(i) through (e)(1)(iii) of this section.

(i) The volumetric flow rate for a batch emission episode, in standard cubic meters per minute (scmm) at 20° C, shall be determined using Method 2, 2A, 2C, or 2D, 40 CFR part 60, appendix A, as appropriate.

(ii) The volumetric flow rate of a representative batch emission episode shall be measured every 15 minutes.

(iii) The average flow rate for a batch emission episode shall be calculated using Equation 14 of this subpart.

$$AFR_{\text{episode}} = \frac{\sum_{i=1}^n FR_i}{n} \quad [\text{Eq. 14}]$$

where:

AFR_{episode} = Average flow rate for the batch emission episode, scmm.

FR_i = Flow rate for individual measurement i , scmm.

n = Number of flow rate measurements taken during the batch emission episode.

(2) The average flow rate for a batch emission episode may be determined by engineering assessment, as defined in paragraph (b)(6)(i) of this section. All data, assumptions, and procedures used shall be documented.

(3) The annual average flow rate for a batch process vent shall be calculated using Equation 15 of this subpart.

$$AFR = \frac{\sum_{i=1}^n (DUR_i)(AFR_{\text{episode},i})}{\sum_{i=1}^n (DUR_i)} \quad [\text{Eq. 15}]$$

where:

AFR = Annual average flow rate for the batch process vent, scmm.

DUR_i = Duration of type i batch emission episodes annually, hrs/yr.

$AFR_{\text{episode},i}$ = Average flow rate for type i batch emission episode, scmm.

n = Number of types of batch emission episodes venting from the batch process vent.

(f) *Determination of cutoff flow rate.* For each batch process vent, the owner or operator shall calculate the cutoff flow rate using Equation 16 of this subpart.

$$CFR = (0.00437) (AE) - 51.6 \quad [\text{Eq. 16}]$$

where:

CFR = Cutoff flow rate, scmm.

AE = Annual TOC or organic HAP emissions, as determined in paragraph (b)(8) of this section, kg/yr.

(g) *Group 1/Group 2 status determination.* The owner or operator shall compare the cutoff flow rate, calculated in accordance with paragraph (f) of this section, with the annual average flow rate, determined in accordance with paragraph (e)(4) of this section. The group determination status for each batch process vent shall be made using the criteria specified in paragraphs (g)(1) and (g)(2) of this section.

(1) If the cutoff flow rate is greater than or equal to the annual average flow rate of the stream, the batch process vent is classified as a Group 1 batch process vent.

(2) If the cutoff flow rate is less than the annual average flow rate of the stream, the batch process vent is classified as a Group 2 batch process vent.

(h) *Determination of halogenation status.* To determine whether a batch process vent or an aggregate batch vent stream is halogenated, the annual

mass emission rate of halogen atoms contained in organic compounds shall be calculated using the procedures specified in paragraphs (h)(1) through (h)(3) of this section.

(1) The concentration of each organic compound containing halogen atoms (ppmv, by compound) for each batch emission episode shall be determined based on any one of the following procedures:

(i) Process knowledge that no halogens or hydrogen halides are present in the process may be used to demonstrate that a batch emission episode is nonhalogenated. Halogens or hydrogen halides that are unintentionally introduced into the process shall not be considered in making a finding that a batch emission episode is nonhalogenated.

(ii) Engineering assessment as discussed in paragraph (b)(6)(i) of this section.

(iii) Concentration of organic compounds containing halogens and hydrogen halides as measured by Method 26 or 26A, 40 CFR part 60, appendix A.

(iv) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

(2) The annual mass emissions of halogen atoms for a batch process vent shall be calculated using Equation 17 of this subpart.

$$E_{\text{halogen}} = K \left[\sum_{j=1}^n \sum_{i=1}^m (C_{\text{avg}j}) (L_{j,i}) (M_{j,i}) \right] \text{AFR} \quad [\text{Eq. 17}]$$

where:

E_{halogen} = Mass of halogen atoms, dry basis, kg/yr.

K = Constant, $0.022 \text{ (ppmv)}^{-1} \text{ (kg-mole per scm) (minute/yr)}$, where standard temperature is 20°C .

AFR = Annual average flow rate of the batch process vent, determined according to paragraph (e) of this section, scmm.

$M_{j,i}$ = Molecular weight of halogen atom i in compound j, kg/kg-mole.

$L_{j,i}$ = Number of atoms of halogen i in compound j.

n = Number of halogenated compounds j in the batch process vent.

m = Number of different halogens i in each compound j of the batch process vent.

$C_{\text{avg}j}$ = Average annual concentration of halogenated compound j in the batch process vent as determined by using Equation 18 of this subpart, dry basis, ppmv.

$$C_{avg_j} = \frac{\sum_{i=1}^n (DUR_i)(C_i)}{\sum_{i=1}^n (DUR_i)} \quad [\text{Eq. 18}]$$

where:

DUR_i = Duration of type i batch emission episodes annually, hrs/yr.

C_i = Average concentration of halogenated compound j in type i batch emission episode, ppmv.

n = Number of types of batch emission episodes venting from the batch process vent.

(3) The annual mass emissions of halogen atoms for an aggregate batch vent stream shall be the sum of the annual mass emissions of halogen atoms for all batch process vents included in the aggregate batch vent stream.

(i) *Process changes affecting Group 2 batch process vents.* Whenever process changes, as described in paragraph (i)(1) of this section, are made that affect one or more Group 2 batch process vents, the owner or operator shall comply with paragraphs (i) (2) and (3) of this section.

(1) Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type; or whenever there is replacement, removal, or modification of recovery equipment considered part of the batch unit operation as specified in paragraph (a)(2) of this section. An increase in the annual number of batch cycles beyond the batch cycle limitation constitutes a process change. For purposes of this paragraph (i), process changes do not include: process upsets; unintentional, temporary process changes; and changes that are within the margin of variation on which the original group determination was based.

(2) For each batch process vent affected by a process change, the owner or operator shall redetermine the group status by repeating the procedures specified in paragraphs (b) through (g) of this section, as applicable; alternatively, engineering assessment, as described in paragraph (b)(6)(i) of this section, can be used to

determine the effects of the process change.

(3) Based on the results from paragraph (i)(2) of this section, owners or operators shall comply with either paragraph (i)(3) (i), (ii), or (iii) of this section.

(i) If the redetermination described in paragraph (i)(2) of this section indicates that a Group 2 batch process vent has become a Group 1 batch process vent as a result of the process change, the owner or operator shall submit a report as specified in §63.1327(b) and shall comply with the Group 1 provisions in §63.1322 through §63.1327 in accordance with the compliance schedule described in §63.1335(e)(6)(iii)(D)(2).

(ii) If the redetermination described in paragraph (i)(2) of this section indicates that a Group 2 batch process vent with annual emissions less than the level specified in paragraph (d) of this section, that is in compliance with §63.1322(g), now has annual emissions greater than or equal to the level specified in paragraph (d) of this section but remains a Group 2 batch process vent, the owner or operator shall submit a report as specified in §63.1327(c) and shall comply with §63.1322(f) in accordance with the compliance schedule required by §63.1335(e)(6)(iii)(D)(2).

(iii) If the redetermination described in paragraph (i)(2) of this section indicates no change in group status or no change in the relation of annual emissions to the levels specified in paragraph (d) of this section, the owner or operator is not required to submit a report, as described in §63.1327(e).

(j) *Process changes to new SAN affected sources using a batch process.* Whenever process changes, as described in paragraph (j)(1) of this section, are made to a new affected source producing SAN using a batch process, the owner or operator shall comply with paragraphs (j) (2) and (3) of this section.

(1) Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type; replacement, removal, or addition of recovery equipment considered part of a batch unit operation, as specified in

paragraph (a)(1) of this section; replacement, removal, or addition of control equipment associated with a continuous or batch process vent or an aggregate batch vent stream. For purposes of this paragraph (j)(1), process changes do not include process upsets or unintentional, temporary process changes.

(2) The owner or operator shall redetermine the percent emission reduction achieved using the procedures specified in § 63.1333(c). If engineering assessment, as described in paragraph (b)(6)(i) of this section, can demonstrate that the process change did not cause the percent emission reduction to decrease, it may be used in lieu of redetermining the percent reduction using the procedures specified in § 63.1333(c).

(3) Where the redetermined percent reduction is less than 84 percent, the owner or operator shall submit a report as specified in § 63.1327(d) and shall comply with § 63.1322(a)(3) and all associated provisions in accordance with the compliance schedule described in § 63.1335(e)(6)(iii)(D)(2).

§ 63.1324 Batch process vents—monitoring provisions.

(a) *General requirements.* Each owner or operator of a batch process vent or aggregate batch vent stream that uses a control device to comply with the requirements in § 63.1322(a) or § 63.1322(b), shall install the monitoring equipment specified in paragraph (c) of this section.

(1) This monitoring equipment shall be in operation at all times when batch emission episodes, or portions thereof, that the owner or operator has selected to control are vented to the control device, or at all times when an aggregate batch vent stream is vented to the control device.

(2) The owner or operator shall operate control devices such that monitored parameters remain above the minimum level or below the maximum level, as appropriate, established as specified in paragraph (f) of this section.

(b) *Continuous process vents.* Each owner or operator of a continuous process vent that uses a control device or recovery device to comply with the re-

quirements in § 63.1322(a)(3) shall comply with the applicable requirements of § 63.1315(a) as specified in § 63.1321(b).

(c) *Batch process vent and aggregate batch vent stream monitoring parameters.* The monitoring equipment specified in paragraphs (c)(1) through (c)(8) of this section shall be installed as specified in paragraph (a) of this section. The parameters to be monitored are specified in Table 7 of this subpart.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, the temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all batch process vents or aggregate batch vent streams are introduced with the primary fuel or are used as the primary fuel is exempt from this requirement.

(4) Where a scrubber is used with an incinerator, boiler, or process heater in concert with the combustion of halogenated batch process vents or halogenated aggregate batch vent streams, the following monitoring equipment is required for the scrubber.

(i) A pH monitoring device equipped with a continuous recorder to monitor the pH of the scrubber effluent.

(ii) A flow meter equipped with a continuous recorder shall be located at the scrubber influent to monitor the scrubber liquid flow rate.

(5) Where an absorber is used, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device are required, each equipped with a continuous recorder.

(6) Where a condenser is used, a condenser exit temperature (product side) monitoring device equipped with a continuous recorder is required.

(7) Where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle are required.

(8) As an alternate to paragraphs (c)(5) through (c)(7) of this section, the owner or operator may install an organic monitoring device equipped with a continuous recorder.

(d) *Alternative monitoring parameters.* An owner or operator of a batch process vent or aggregate batch vent stream may request approval to monitor parameters other than those required by paragraph (c) of this section. The request shall be submitted according to the procedures specified in § 63.1335(f). Approval shall be requested if the owner or operator:

(1) Uses a control device other than those included in paragraph (c) of this section; or

(2) Uses one of the control devices included in paragraph (c) of this section, but seeks to monitor a parameter other than those specified in Table 7 of this subpart and paragraph (c) of this section.

(e) *Monitoring of bypass lines.* Owners or operators of a batch process vent or aggregate batch vent stream using a vent system that contains bypass lines that could divert emissions away from a control device used to comply with § 63.1322(a) or § 63.1322(b) shall comply with either paragraph (d)(1), (d)(2), or (d)(3) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph (e).

(1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.1326(e)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert emissions away from the control device and to the atmosphere; or

(2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and emissions are not diverted through the bypass line. Records shall be generated as specified in § 63.1326(e)(4).

(3) Continuously monitor the bypass line valve position using computer monitoring and record any periods when the position of the bypass line valve has changed as specified in § 63.1326(e)(4).

(f) *Establishment of parameter monitoring levels.* Parameter monitoring levels for batch process vents and aggregate batch vent streams shall be established as specified in paragraphs (f)(1) through (f)(3) of this section. For continuous process vents complying with § 63.1322(a)(3), parameter monitoring levels shall be established as specified in § 63.1315(a), except as specified in paragraph (f)(4) of this section.

(1) For each parameter monitored under paragraph (c) of this section, the owner or operator shall establish a level, defined as either a maximum or minimum operating parameter as denoted in Table 8 of this subpart, that indicates proper operation of the control device. The level shall be established in accordance with the procedures specified in § 63.1334.

(i) For batch process vents using a control device to comply with § 63.1322(a)(2), the established level shall reflect the control efficiency established as part of the initial compliance demonstration specified in § 63.1325(c)(2).

(ii) For aggregate batch vent streams using a control device to comply with § 63.1322(b)(2), the established level shall reflect the control efficiency requirement specified in § 63.1322(b)(2).

(iii) For batch process vents and aggregate batch vent streams using a control device to comply with § 63.1322(a)(3), the established level shall reflect the control efficiency established as part of the initial compliance demonstration specified in § 63.1325(f)(4).

(2) The established level, along with supporting documentation, shall be submitted in the Notification of Compliance Status or the operating permit application as required in § 63.1335(e)(5) or § 63.1335(e)(8), respectively.

(3) The operating day shall be defined as part of establishing the parameter monitoring level and shall be submitted with the information in paragraph (f)(2) of this section. The definition of operating day shall specify the times at which an operating day begins and ends. The operating day shall not exceed 24 hours.

(4) For continuous process vents using a control or recovery device to comply with § 63.1322(a)(3), the established level shall reflect the control efficiency established as part of the initial compliance demonstration specified in § 63.1325(f)(4).

§ 63.1325 Batch process vents—performance test methods and procedures to determine compliance.

(a) *Use of a flare.* When a flare is used to comply with §§ 63.1322 (a)(1), (a)(3), (b)(1), or (b)(3), the owner or operator shall comply with the flare provisions in § 63.11(b).

(b) *Exceptions to performance tests.* An owner or operator is not required to conduct a performance test when a control device specified in paragraphs (b)(1) through (b)(5) of this section is used to comply with § 63.1322 (a)(2) or (a)(3). Further, if a performance test meeting the conditions specified in paragraph (b)(6) of this section has been conducted by the owner or operator, the results of said performance test may be submitted and a performance test, as required by this section, is not required.

(1) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) A boiler or process heater where the vent stream is introduced with the

primary fuel or is used as the primary fuel.

(3) A control device for which a performance test was conducted for determining compliance with a New Source Performance Standard (NSPS) and the test was conducted using the same procedures specified in this section and no process changes have been made since the test. Recovery devices used for controlling emissions from continuous process vents complying with § 63.1322(a)(3) are also eligible for the exemption described in this paragraph (b)(3).

(4) A boiler or process heater burning hazardous waste for which the owner or operator:

(i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(5) An incinerator burning hazardous waste for which the owner or operator complies with the requirements of 40 CFR part 264, subpart O.

(6) Performance tests done for other subparts in 40 CFR part 60 or part 63 where total organic HAP or TOC was measured, provided the owner or operator can demonstrate that operating conditions for the process and control device during the performance test are representative of current operating conditions.

(c) *Batch process vent testing and procedures for compliance with § 63.1322(a)(2).* Except as provided in paragraph (b) of this section, an owner or operator using a control device to comply with § 63.1322(a)(2) shall conduct a performance test using the procedures specified in paragraph (c)(1) of this section in order to determine the control efficiency of the control device. An owner or operator shall determine the percent reduction for the batch cycle using the control efficiency of the control device as specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section and the procedures specified in paragraph (c)(2) of this section. Compliance may be based on either total organic HAP or TOC. For purposes of this paragraph (c) and all paragraphs that are part of this paragraph (c), the

term “batch emission episode” shall have the meaning “period of the batch emission episode selected for control,” which may be the entire batch emission episode or may only be a portion of the batch emission episode.

(1) Performance tests shall be conducted as specified in paragraphs (c)(1)(i) through (c)(1)(v) of this section.

(i) Except as specified in paragraph (c)(1)(i)(A) of this section, a test shall be performed for the entire period of each batch emission episode in the batch cycle that the owner or operator selects to control as part of achieving the required 90 percent emission reduction for the batch cycle specified in § 63.1322(a)(2). Only one test is required for each batch emission episode selected by the owner or operator for control. The owner or operator shall follow the procedures listed in paragraphs (c)(1)(i)(B) through (c)(1)(i)(D) of this section.

(A) Alternatively, an owner or operator may choose to test only those periods of the batch emission episode during which the emission rate for the entire episode can be determined or during which the emissions are greater than the average emission rate of the batch emission episode. The owner or operator choosing either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used provided the results are still relevant to the current batch process vent conditions.

(B) Method 1 or 1A, 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. No traverse is necessary when Method 2A or 2D, 40 CFR part 60, appendix A is used to determine gas stream volumetric flow rate. Inlet sampling sites shall be located as specified in paragraphs (c)(1)(i)(B)(1) and (c)(1)(i)(B)(2) of this section. Outlet sampling sites shall be located at the

outlet of the control device prior to release to the atmosphere.

(1) The control device inlet sampling site shall be located at the exit from the batch unit operation before any control device. § 63.1323(a)(2) describes those recovery devices considered part of the unit operation. Inlet sampling sites would be after these specified recovery devices.

(2) If a batch process vent is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all batch process vents and primary and secondary fuels introduced into the boiler or process heater.

(C) Gas stream volumetric flow rate and/or average flow rate shall be determined as specified in § 63.1323(e).

(D) Method 18 or Method 25A, 40 CFR part 60, appendix A shall be used to determine the concentration of organic HAP or TOC, as appropriate. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part may be used. The use of Method 25A, 40 CFR part 60, appendix A shall comply with paragraphs (c)(1)(i)(D)(1) and (c)(1)(i)(D)(2) of this section.

(1) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A shall be the single organic HAP representing the largest percent by volume of the emissions.

(2) The use of Method 25A, 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(ii) If an integrated sample is taken over the entire test period to determine TOC or average total organic HAP concentration, emissions per batch emission episode shall be calculated using Equations 19 and 20 of this subpart.

$$E_{\text{episode,inlet}} = K \left[\sum_{j=1}^n (C_{j,\text{inlet}})(M_j) \right] (AFR_{\text{inlet}})(T_h) \quad [\text{Eq. 19}]$$

$$E_{\text{episode,outlet}} = K \left[\sum_{j=1}^n (C_{j,\text{outlet}})(M_j) \right] (AFR_{\text{outlet}})(T_h) \quad [\text{Eq. 20}]$$

where:

E_{episode} = Inlet or outlet emissions, kg/episode.

K = Constant, $2.494 \times 10^{-6} \text{ (ppmv)}^{-1} \text{ (gm-mole/scm) (kg/gm) (min/hr)}$, where standard temperature is 20°C .

C_j = Average inlet or outlet concentration of TOC or sample component j of the gas stream for the batch emission episode, dry basis, ppmv.

M_j = Molecular weight of TOC or sample component j of the gas stream, gm/gm-mole.

AFR = Average inlet or outlet flow rate of gas stream for the batch emission episode, dry basis, scmm.

T_h = Hours/episode

n = Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated using a TOC concentration measured using Method 25A, 40 CFR part 60, appendix A.

(iii) If grab samples are taken to determine TOC or total organic HAP concentration, emissions shall be calculated according to paragraphs (c)(1)(iii) (A) and (B) of this section.

(A) For each measurement point, the emission rates shall be calculated using Equations 21 and 22 of this subpart.

$$E_{\text{point,inlet}} = K \left[\sum_{j=1}^n C_j M_j \right] FR_{\text{inlet}} \quad [\text{Eq. 21}]$$

$$E_{\text{point,outlet}} = K \left[\sum_{j=1}^n C_j M_j \right] FR_{\text{outlet}} \quad [\text{Eq. 22}]$$

where:

E_{point} = Inlet or outlet emission rate for the measurement point, kg/hr.

K = Constant, $2.494 \times 10^{-6} \text{ (ppmv)}^{-1} \text{ (gm-mole/scm) (kg/gm) (min/hr)}$, where standard temperature is 20°C .

C_j = Inlet or outlet concentration of TOC or sample organic HAP component j of the gas stream, dry basis, ppmv.

M_j = Molecular weight of TOC or sample organic HAP component j of the gas stream, gm/gm-mole.

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FR = Inlet or outlet flow rate of gas stream for the measurement point, dry basis, scmm.

n = Number of organic HAP in stream.

NOTE: Summation not required if TOC emissions are being estimated using a TOC

concentration measured using Method 25A, 40 CFR part 60, appendix A.

(B) The emissions per batch emission episode shall be calculated using Equations 23 and 24 of this subpart.

$$E_{\text{episode,inlet}} = (\text{DUR}) \left[\sum_{i=1}^n \frac{E_{\text{point,inlet},i}}{n} \right] \quad [\text{Eq. 23}]$$

$$E_{\text{episode,outlet}} = (\text{DUR}) \left[\sum_{i=1}^n \frac{E_{\text{point,outlet},i}}{n} \right] \quad [\text{Eq. 24}]$$

where:

E_{episode} = Inlet or outlet emissions, kg/episode.

DUR = Duration of the batch emission episode, hr/episode.

$E_{\text{point},i}$ = Inlet or outlet emissions for measurement point i, kg/hr.

n = Number of measurements.

(iv) The control efficiency for the control device shall be calculated using Equation 25 of this subpart.

$$R = \frac{\sum_{i=1}^n E_{\text{inlet},i} - \sum_{i=1}^n E_{\text{outlet},i}}{\sum_{i=1}^n E_{\text{inlet},i}} (100) \quad [\text{Eq. 25}]$$

where:

R = Control efficiency of control device, percent.

E_{inlet} = Mass rate of TOC or total organic HAP for batch emission episode i at the inlet to the control device as calculated under paragraph (c)(1)(ii) or (c)(1)(iii) of this section, kg/hr.

E_{outlet} = Mass rate of TOC or total organic HAP for batch emission episode i at the outlet of the control device, as calculated under paragraph (c)(1)(ii) or (c)(1)(iii) of this section, kg/hr.

n = Number of batch emission episodes in the batch cycle selected to be controlled.

(v) If the batch process vent entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic HAP or TOC across the device shall be determined by comparing the TOC or total organic HAP in all combusted batch process vents and primary and secondary fuels with the TOC or total organic HAP exiting the combustion device, respectively.

(2) The percent reduction for the batch cycle shall be determined using Equation 26 of this subpart and the control device efficiencies specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section. All information used to calculate the batch cycle percent re-

duction, including a definition of the batch cycle identifying all batch emission episodes, must be recorded as specified in § 63.1326(b)(2). This information shall include identification of those batch emission episodes, or portions thereof, selected for control.

$$PR = \frac{\sum_{i=1}^n E_{unc} \sum_{i=1}^n E_{inlet,con} - (1-R) \sum_{i=1}^n E_{inlet,con}}{\sum_{i=1}^n E_{unc} + \sum_{i=1}^n E_{inlet,con}} \quad (100) \quad [\text{Eq. 26}]$$

where:

PR = Percent reduction

E_{unc} = Mass rate of TOC or total organic HAP for uncontrolled batch emission episode i , kg/hr.

$E_{inlet,con}$ = Mass rate of TOC or total organic HAP for controlled batch emission episode i at the inlet to the control device, kg/hr.

R = Control efficiency of control device as specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section.

n = Number of uncontrolled batch emission episodes, controlled batch emission episodes, and control devices. The value of n is not necessarily the same for these three items.

(i) If a performance test is required by paragraph (c) of this section, the control efficiency of the control device shall be as determined in paragraph (c)(1)(iv) of this section.

(ii) If a performance test is not required by paragraph (c) of this section for a combustion control device, as specified in paragraph (b) of this section, the control efficiency shall be 98 percent. The control efficiency for a flare shall be 98 percent.

(iii) If a performance test is not required by paragraph (c) of this section for a noncombustion control device, the control efficiency shall be determined by the owner or operator based on engineering assessment.

(d) *Batch process vent and aggregate batch vent stream testing for compliance with § 63.1322(c) [halogenated emission streams].* An owner or operator control-

ling halogenated emissions in compliance with § 63.1322(c) shall conduct a performance test to determine compliance with the control efficiency specified in § 63.1322(c)(1) or the emission limit specified in § 63.1322(c)(2) for hydrogen halides and halogens.

(1) Sampling sites shall be located at the inlet and outlet of the scrubber or other control device used to reduce halogen emissions in complying with § 63.1322(c)(1) or at the outlet of the control device used to reduce halogen emissions in complying with § 63.1322(c)(2).

(2) The mass emissions of each hydrogen halide and halogen compound for the batch cycle or aggregate batch vent stream shall be calculated from the measured concentrations and the gas stream flow rate(s) determined by the procedures specified in paragraphs (d)(2)(i) and (d)(2)(ii) of this section except as specified in paragraph (d)(5) of this section.

(i) Method 26 or Method 26A, 40 CFR part 60, appendix A, shall be used to determine the concentration, in Mg per dry scm, of total hydrogen halides and halogens present in the emissions stream.

(ii) Gas stream volumetric flow rate and/or average flow rate shall be determined as specified in § 63.1323(e).

(3) To determine compliance with the percent reduction specified in § 63.1322(c)(1), the mass emissions for any hydrogen halides and halogens present at the inlet of the scrubber or other control device shall be summed together. The mass emissions of any

hydrogen halides or halogens present at the outlet of the scrubber or other control device shall be summed together. Percent reduction shall be determined by subtracting the outlet mass emissions from the inlet mass emissions and then dividing the result by the inlet mass emissions.

(4) To determine compliance with the emission limit specified in § 63.1322(c)(2), the annual mass emissions for any hydrogen halides and halogens present at the outlet of the control device and prior to any combustion device shall be summed together and compared to the emission limit specified in § 63.1322(c)(2).

(5) The owner or operator may use any other method to demonstrate compliance if the method or data has been validated according to the applicable procedures of Method 301 of appendix A of this part.

(e) *Aggregate batch vent stream testing for compliance with § 63.1322 (b)(2) or (b)(3).* Owners or operators of aggregate batch vent streams complying with § 63.1322 (b)(2) or (b)(3) shall conduct a performance test using the performance testing procedures for continuous process vents in § 63.116(c). For the purposes of this subpart, when the provisions of § 63.116(c) specify that Method 18, 40 CFR part 60, appendix A, shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A, may be used. The use of Method 25A, 40 CFR part 60, appendix A, shall comply with paragraphs (e)(1) and (e)(2) of this section.

(1) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A, shall be the single organic HAP representing the largest percent by volume of the emissions.

(2) The use of Method 25A, 40 CFR part 60, appendix A, is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(f) *Compliance with § 63.1322(a)(3) [new SAN batch affected sources].* Except as provided in paragraph (b) of this section, an owner or operator using a control or recovery device to comply with the percent reduction requirement in § 63.1322(a)(3) shall conduct perform-

ance tests as specified in either paragraph (f)(1), (f)(2), or (f)(3) of this section, as applicable. Compliance with § 63.1322(a)(3) shall be determined as specified in paragraph (f)(4) of this section.

(1) For batch process vents, performance tests shall be conducted using the procedures specified in paragraph (c) of this section, except that the owner or operator is not required to determine the percent reduction for the batch cycle as specified in paragraph (c)(2) of this section.

(2) For continuous process vents, performance tests shall be conducted as required by the applicable requirements of § 63.1315(a) as specified in § 63.1321(b).

(3) For aggregate batch vent streams, performance tests shall be conducted as specified in paragraph (e) of this section.

(4) Compliance with the percent reduction requirement of § 63.1322(a)(3) shall be demonstrated using the procedures specified in § 63.1333(c) and the control device efficiencies specified in either paragraph (f)(4)(i) or (f)(4)(ii) of this section. Emissions for uncontrolled continuous process vents and aggregate batch vent streams shall be determined based on the direct measurement procedures specified in paragraph (f)(2) and (f)(3) of this section, respectively, or based on engineering assessment, as specified in § 63.1323(b)(6)(i). At the discretion of the owner or operator, emissions for uncontrolled batch process vents shall be determined based on any of the procedures in § 63.1323(b).

(i) For noncombustion devices, the control efficiency shall be as determined by the performance test required by paragraph (f)(1), (f)(2), or (f)(3) of this section. Alternatively, if a performance test is not required by paragraph (c) of this section, the control efficiency shall be determined by the owner or operator based on engineering assessment.

(ii) For combustion devices, the control efficiency shall be as determined by the performance test required by paragraph (f)(1), (f)(2), or (f)(3) of this section. Alternatively, if a performance test is not required, the control

efficiency shall be 98 percent. The control efficiency for a flare shall be 98 percent.

(g) *Batch cycle limitation.* The batch cycle limitation required by § 63.1322 (f) and (g) shall be established as specified in paragraph (g)(1) of this section and shall include the elements specified in paragraph (g)(2) of this section.

(1) The batch cycle limitation shall be determined by the owner or operator such that annual emissions for the batch process vent remain less than the level specified in § 63.1323(d) when complying with § 63.1322(g). Alternatively, when complying with § 63.1322(f), the batch cycle limitation shall ensure that annual emissions remain at a level such that said batch process vent remains a Group 2 batch process vent, given the actual annual flow rate for said batch process vent determined according to the procedures specified in § 63.1323(e). The batch cycle limitation shall be determined using the same basis, as described in § 63.1323(a)(1), used to make the group determination (i.e., expected mix of products or worst-case HAP emitting product). The establishment of the batch cycle limitation is not dependent upon any past production or activity level.

(i) If the expected mix of products serves as the basis for the batch cycle limitation, the batch cycle limitation shall be determined such that any foreseeable combination of products which the owner or operator desires the flexibility to manufacture shall be allowed. Combinations of products not accounted for in the documentation required by paragraph (g)(2)(iv) of this section shall not be allowed within the restrictions of the batch cycle limitation.

(ii) If, for a batch process vent with more than one product, a single worst-case HAP emitting product serves as the basis for the batch cycle limitation, the batch cycle limitation shall be determined such that the maximum number of batch cycles the owner or operator desires the flexibility to accomplish, using the worst-case HAP emitting product and ensuring that the batch process vent remains a Group 2 batch process vent or that emissions remain less than the level specified in

§ 63.1323(d), shall be allowed. This value shall be the total number of batch cycles allowed within the restrictions of the batch cycle limitation regardless of which products are manufactured.

(2) Documentation supporting the establishment of the batch cycle limitation shall include the information specified in paragraphs (g)(2)(i) through (g)(2)(v) of this section, as appropriate.

(i) Identification that the purpose of the batch cycle limitation is to comply with § 63.1322 (f)(1) or (g)(1).

(ii) Identification that the batch cycle limitation is based on a single worst-case HAP emitting product or on the expected mix of products for said batch process vent as allowed under § 63.1323(a)(1).

(iii) Definition of operating year for purposes of determining compliance with the batch cycle limitation.

(iv) If the batch cycle limitation is based on a single worst-case HAP emitting product, documentation specified in § 63.1323 (a)(1)(ii) through (a)(1)(iv), as appropriate, describing how the single product meets the requirements for worst-case HAP emitting product and the number of batch cycles allowed under the batch cycle limitation.

(v) If the batch cycle limitation is based on the expected mix of products, the owner or operator shall provide documentation that describes as many scenarios for differing mixes of products (i.e., how many batch cycles for each product) that the owner or operator desires the flexibility to accomplish. Alternatively, the owner or operator shall provide a description of the relationship among the mix of products that will allow a determination of compliance with the batch cycle limitation under an infinite number of scenarios. For example, if a batch process vent has two products, each product has the same flow rate and emits for the same amount of time, and product No. 1 has twice the emissions as product No. 2, the relationship describing an infinite number of scenarios would be that the owner or operator can accomplish two batch cycles of product No. 2 for each batch cycle of product No. 1 within the restriction of the batch cycle limitation.

§ 63.1326 Batch process vents—record-keeping provisions.

(a) *Group determination records for batch process vents.* Except as provided in paragraphs (a)(7) through (a)(9) of this section, each owner or operator of an affected source shall maintain the records specified in paragraphs (a)(1) through (a)(6) of this section for each batch process vent subject to the group determination procedures of § 63.1323. Except for paragraph (a)(1) of this section, the records required by this paragraph (a) are restricted to the information developed and used to make the group determination under § 63.1323(b) through § 63.1323(g), as appropriate. The information required by paragraph (a)(1) of this section is required for all batch process vents subject to the group determination procedures of § 63.1323. If an owner or operator did not need to develop certain information (e.g., annual average flow rate) to determine the group status, this paragraph (a) does not require that additional information be developed.

(1) An identification of each unique product that has emissions from one or more batch emission episodes venting from the batch process vent.

(2) A description of, and an emission estimate for, each batch emission episode, and the total emissions associated with one batch cycle for each unique product identified in paragraph (a)(1) of this section that was considered in making the group determination under § 63.1323.

(3) Total annual uncontrolled TOC or organic HAP emissions, determined at the exit from the batch unit operation before any control device, determined in accordance with § 63.1323(b).

(i) For Group 2 batch process vents, said emissions shall be determined at the batch cycle limitation.

(ii) For Group 1 batch process vents, said emissions shall be those used to determine the group status of the batch process vent.

(4) The annual average flow rate for the batch process vent, determined in accordance with § 63.1323(e).

(5) The cutoff flow rate, determined in accordance with § 63.1323(f).

(6) The results of the batch process vent group determination, conducted in accordance with § 63.1323(g).

(7) If a batch process vent is in compliance with § 63.1322 (a) or (b) and the control device is operating at all times when batch emission episodes are venting from the batch process vent, none of the records in paragraphs (a)(1) through (a)(6) of this section are required.

(8) If a batch process vent is in compliance with § 63.1322 (a) or (b), but the control device is operated only during selected batch emission episodes, only the records in paragraphs (a)(1) through (a)(3) of this section are required.

(9) If the total annual emissions from the batch process vent are less than the appropriate level specified in § 63.1323(d), only the records in paragraphs (a)(1) through (a)(3) of this section are required.

(b) *Compliance demonstration records.* Each owner or operator of a batch process vent or aggregate batch vent stream complying with § 63.1322 (a) or (b), shall keep the following records, as applicable, up-to-date and readily accessible:

(1) The annual mass emissions of halogen atoms in the batch process vent or aggregate batch vent stream determined according to the procedures specified in § 63.1323(h);

(2) If a batch process vent is in compliance with § 63.1322(a)(2), records documenting the batch cycle percent reduction as specified in § 63.1325(c)(2); and

(3) When using a flare to comply with § 63.1322 (a)(1), (a)(3), (b)(1), or (b)(3):

(i) The flare design (i.e., steam-assisted, air-assisted or non-assisted);

(ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.1325(a); and

(iii) All periods during the compliance determination required by § 63.1325(a) when the pilot flame is absent.

(4) The following information when using a control device to achieve compliance with § 63.1322 (a)(2), (a)(3), (b)(2), or (b)(3):

(i) For an incinerator or non-combustion control device, the percent reduction of organic HAP or TOC achieved,

as determined using the procedures specified in § 63.1325(c) for batch process vents and § 63.1325(e) for aggregate batch vent streams;

(ii) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater;

(iii) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the vent stream is introduced with combustion air or used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC achieved, as determined using the procedures specified in § 63.1325(c) for batch process vents and § 63.1325(e) for aggregate batch vent streams; and

(iv) For a scrubber or other control device following a combustion device to control halogenated batch process vents or halogenated aggregate batch vent streams, the percent reduction of total hydrogen halides and halogens as determined under § 63.1325(d)(3) or the emission limit determined under § 63.1325(d)(4).

(c) *Establishment of parameter monitoring level records.* For each parameter monitored according to § 63.1324(c) and Table 7 of this subpart, or for alternate parameters and/or parameters for alternate control devices monitored according to § 63.1327(f) as allowed under § 63.1324(d), maintain documentation showing the establishment of the level that indicates proper operation of the control device as required by § 63.1324(f) for parameters specified in § 63.1324(c) and as required by § 63.1335(e) for alternate parameters. Said documentation shall include the parameter monitoring data used to establish the level.

(d) *Group 2 batch process vent continuous compliance records.* The owner or operator of a Group 2 batch process vent shall comply with either paragraph (d)(1) or (d)(2) of this section, as appropriate.

(1) The owner or operator of a Group 2 batch process vent complying with § 63.1322(g) shall keep the following records up-to-date and readily accessible:

(i) Records designating the established batch cycle limitation required by § 63.1322(g)(1) and specified in § 63.1325(g).

(ii) Records specifying the number and type of batch cycles accomplished for each three month period.

(2) The owner or operator of a Group 2 batch process vent complying with § 63.1322(f) shall keep the following records up-to-date and readily accessible:

(i) Records designating the established batch cycle limitation required by § 63.1322(f)(1) and specified in § 63.1325(g).

(ii) Records specifying the number and type of batch cycles accomplished for each three month period.

(e) *Controlled batch process vent continuous compliance records.* Each owner or operator of a batch process vent that uses a control device to comply with § 63.1322(a) shall keep the following records, as applicable, up-to-date and readily accessible:

(1) Continuous records of the equipment operating parameters specified to be monitored under § 63.1324(c) as applicable, and listed in Table 7 of this subpart, or specified by the Administrator in accordance with § 63.1327(f) as allowed under § 63.1324(d). Said records shall be kept as specified under § 63.1335(d), except as specified in paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) For flares, the records specified in Table 7 of this subpart shall be kept rather than averages.

(ii) For carbon adsorbers, the records specified in Table 7 of this subpart shall be kept rather than averages.

(2) Records of the batch cycle daily average value of each continuously monitored parameter, except as provided in paragraph (e)(2)(iii) of this section, as calculated using the procedures specified in paragraphs (e)(2)(i) through (e)(2)(ii) of this section.

(i) The batch cycle daily average shall be calculated as the average of all parameter values measured for an operating day during those batch emission episodes, or portions thereof, in the batch cycle that the owner or operator has selected to control.

(ii) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in computing the batch cycle daily averages.

(iii) If all recorded values for a monitored parameter during an operating day are above the minimum or below the maximum level established in accordance with § 63.1324(f), the owner or operator may record that all values were above the minimum or below the maximum level established rather than calculating and recording a batch cycle daily average for that operating day.

(3) Hourly records of whether the flow indicator for bypass lines specified in § 63.1324(e)(1) was operating and whether a diversion was detected at any time during the hour. Also, records of the times of all periods when the vent is diverted from the control device or the flow indicator specified in § 63.1324(e)(1) is not operating.

(4) Where a seal or closure mechanism is used to comply with § 63.1324(e)(2) or where computer monitoring of the position of the bypass valve is used to comply with § 63.1324(e)(3), hourly records of flow are not required.

(i) For compliance with § 63.1324(e)(2), the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has broken.

(ii) For compliance with § 63.1324(e)(3), the owner or operator shall record the times of all periods when the bypass line valve position has changed.

(5) Records specifying the times and duration of periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments. In addition, records specifying any other periods of process or control device operation when monitors are not operating.

(f) *Aggregate batch vent stream continuous compliance records.* In addition to the records specified in paragraphs (b) and (c) of this section, each owner or operator of an aggregate batch vent stream using a control device to comply with § 63.1322(b) shall keep records in accordance with the requirements for continuous process vents in § 63.118

(a) and (b), as applicable and as appropriate, except that when complying with § 63.118(b), owners or operators shall disregard statements concerning TRE index values for the purposes of this subpart.

§ 63.1327 Batch process vents—reporting requirements.

(a) The owner or operator of a batch process vent or aggregate batch vent stream at an affected source shall submit the information specified in paragraphs (a)(1) through (a)(4) of this section, as appropriate, as part of the Notification of Compliance Status specified in § 63.1335(e)(5).

(1) For each batch process vent complying § 63.1322(a) and each aggregate batch vent stream complying § 63.1322(b), the information specified in § 63.1326 (b) and (c), as applicable.

(2) For each Group 2 batch process vent with annual emissions less than the level specified in § 63.1323(d), the information specified in § 63.1326(d)(1)(i).

(3) For each Group 2 batch process vent with annual emissions greater than or equal to the level specified in § 63.1323(d), the information specified in § 63.1326(d)(2)(i).

(4) For each batch process vent subject to the group determination procedures, the information specified in § 63.1326(a), as appropriate.

(b) Whenever a process change, as defined in § 63.1323(i)(1), is made that causes a Group 2 batch process vent to become a Group 1 batch process vent, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(1) A description of the process change; and

(2) A schedule for compliance with the provisions of § 63.1322 (a) or (b), as appropriate, as required under § 63.1335(e)(6)(iii)(D)(2).

(c) Whenever a process change, as defined in § 63.1323(i)(1), is made that causes a Group 2 batch process vent with annual emissions less than the level specified in § 63.1323(d) that is in

compliance with § 63.1322(g) to have annual emissions greater than or equal to the level specified in § 63.1323(d) but remains a Group 2 batch process vent, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(1) A description of the process change;

(2) The results of the redetermination of the annual emissions, average flow rate, and cutoff flow rate required under § 63.1323(i) and recorded under § 63.1326 (a)(3) through (a)(5); and

(3) The batch cycle limitation determined in accordance with § 63.1322(f)(1).

(d) Whenever a process change, as defined in § 63.1323(j)(1), is made that causes the percent reduction for all process vents at a new SAN affected source using a batch process to be less than 84 percent, the owner or operator shall submit a report within 180 operating days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in § 63.1335(e)(6)(iii)(D)(2). The following information shall be submitted:

(1) A description of the process change; and

(2) A schedule for compliance with the provisions of § 63.1322(a)(3), as required under § 63.1335(e)(6)(iii)(D)(2).

(e) The owner or operator is not required to submit a report of a process change if one of the conditions specified in paragraphs (e)(1) and (e)(2) of this section is met.

(1) The process change does not meet the description of a process change in § 63.1323 (i) or (j).

(2) The redetermined group status remains Group 2 for an individual batch process vent with annual emissions greater than or equal to the level specified in § 63.1323(d), a Group 2 batch process vent with annual emissions less than the level specified in § 63.1323(d) complying with § 63.1322(g) continues to have emissions less than the level spec-

ified in § 63.1323(d), or the achieved emission reduction remains at 84 percent or greater for new SAN affected sources using a batch process.

(f) If an owner or operator uses a control device other than those specified in § 63.1324(c) and listed in Table 7 of this subpart or requests approval to monitor a parameter other than those specified in § 63.1324(c) and listed in Table 7 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures, as specified in § 63.1335(f), as part of the Precompliance Report required under § 63.1335(e)(3). The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the Precompliance Report.

(g) Owners or operators complying with § 63.1324(e), shall comply with paragraph (g)(1) or (g)(2) of this section, as appropriate.

(1) Reports of the times of all periods recorded under § 63.1326(e)(3) when the batch process vent is diverted from the control device through a bypass line.

(2) Reports of all occurrences recorded under § 63.1326(e)(4) in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out.

§ 63.1328 Heat exchange systems provisions.

(a) This section applies to each affected source with the exception of each process contact cooling tower that is associated with an affected source manufacturing PET. The owner or operator of said affected source shall comply with § 63.104, with the differences noted in paragraphs (b) through (d) of this section, for the purposes of this subpart.

(b) When the Periodic Report requirements contained in § 63.152(c) are referred to in § 63.104(b), the Periodic Report requirements contained in § 63.1335(e)(6) shall apply for the purposes of this subpart.

(c) When an owner or operator invokes the delay of repair provisions as specified in § 63.104(b)(3), the information required by § 63.104 (b)(4)(i) through (b)(4)(v) shall be included in the next semi-annual Periodic Report

required under § 63.1335(e)(6), for the purposes of this subpart. If the leak remains unrepaired, the information shall also be submitted in each subsequent Periodic Report, until the repair of the leak is reported.

(d) The compliance date for heat exchange systems subject to the provisions of this section is specified in § 63.1311.

§ 63.1329 Process contact cooling towers provisions.

(a) This section applies to each new affected source that manufactures PET and each existing affected source that manufactures PET using a continuous terephthalic acid high viscosity multiple end finisher process. The owner or operator of a new affected source shall comply with paragraph (b) of this section. The owner or operator of an existing affected source that manufactures PET using a continuous terephthalic acid high viscosity multiple end finisher process shall comply with paragraph (c) of this section. The compliance data for process contact cooling towers subject to the provisions of this section is specified in § 63.1311.

(b) *New affected source requirements.* The owner or operator of a new affected source subject to this section shall comply with paragraphs (b)(1) through (b)(2) of this section.

(1) The owner or operator of a new affected source subject to this section shall not send contact condenser effluent associated with a vacuum system to a process contact cooling tower.

(2) The owner or operator of a new affected source subject to this section shall indicate in the Notification of Compliance Status, as required in § 63.1335(e)(5), that contact condenser effluent associated with vacuum systems is not sent to process contact cooling towers.

(c) *Existing affected source requirements.* The owner or operator of an existing affected source subject to this section who manufactures PET using a continuous terephthalic acid high viscosity multiple end finisher process,

and who is subject or becomes subject to 40 CFR part 60, subpart DDD, shall maintain an ethylene glycol concentration in the cooling tower at or below 4.0 percent by weight averaged on a daily basis over a rolling 14-day period of operating days. Compliance with this paragraph (c) shall be determined as specified in paragraphs (c)(1) through (c)(4) of this section.

(1) To determine the ethylene glycol concentration, owners or operators shall follow the procedures specified in 40 CFR 60.564(j)(1), except as provided in paragraph (c)(2) of this section.

(i) At least one sample per operating day shall be collected using the procedures specified in 40 CFR 60.564(j)(1)(i). An average ethylene glycol concentration by weight shall be calculated on a daily basis over a rolling 14-day period of operating days. Each daily average ethylene glycol concentration so calculated constitutes a performance test. Exceedance of the standard during the reduced testing program specified in paragraph (b)(1)(ii) of this section is a violation of these standards.

(ii) The owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 1.2 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced test period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 1.2 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. The 95 percent confidence interval shall be calculated as specified in paragraph (b)(1)(iii) of this section. A reduced program may be reinstituted if the requirements specified in this paragraph (c)(1)(ii) are met.

(iii) The upper 95 percent confidence interval shall be calculated using the Equation 27 of this subpart:

$$CI_{95} = \frac{\sum_{i=1}^n X_i}{n} + 2 \sqrt{\frac{n \sum x^2 - (\sum x)^2}{n(n-1)}} \quad [\text{Eq. 27}]$$

where:

X_i = daily ethylene glycol concentration for each day used to calculate each 14-day rolling average used in test results to justify implementing the reduced testing program.

n = number of ethylene glycol concentrations.

(2) Measuring an alternative parameter, such as carbon oxygen demand or biological oxygen demand, that is demonstrated to be directly proportional to the ethylene glycol concentration shall be allowed. Such parameter shall be measured during the initial 14-day performance test during which the facility is shown to be in compliance with the ethylene glycol concentration standard whereby the ethylene glycol concentration is determined using the procedures described in paragraph (b)(1) of this section. The alternative parameter shall be measured on a daily basis and the average value of the alternative parameter shall be calculated on a daily basis over a rolling 14-day period of operating days. Each daily average value of the alternative parameter constitutes a performance test.

(3) During each performance test, daily measurement and daily average 14-day rolling averages of the ethylene glycol concentration in the cooling tower water shall be recorded. For the initial performance test, these records shall be submitted in the Notification of Compliance Status report.

(4) All periods when the 14-day rolling average exceeds the standard shall be reported in the Periodic Report.

§ 63.1330 Wastewater provisions.

(a) The owner or operator of each affected source shall comply with the requirements of §§ 63.131 through 63.148, with the differences noted in paragraphs (a)(1) through (a)(12) of this section for the purposes of this subpart.

(1) When the determination of equivalence criteria in § 63.102(b) is re-

ferred to in §§ 63.132, 63.133, and 63.137, the provisions in § 63.6(g) shall apply.

(2) When the storage tank requirements contained in §§ 63.119 through 63.123 are referred to in §§ 63.132 through 63.148, §§ 63.119 through 63.123 are applicable, with the exception of the differences referred to in § 63.1314, for the purposes of this subpart.

(3) When the owner or operator requests to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions referred to in § 63.151(g), or the owner or operator submits an operating permit application instead of an Implementation Plan as specified in § 63.152(e), as referred to in § 63.146(a)(3), § 63.1335(g) and § 63.1335(e)(8), respectively, shall apply for the purposes of this subpart.

(4) When the Notification of Compliance Status requirements contained in § 63.152(b) are referred to in §§ 63.146 and 63.147, the Notification of Compliance Status requirements contained in § 63.1335(e)(5) shall apply for the purposes of this subpart.

(5) When the Periodic Report requirements contained in § 63.152(c) are referred to in §§ 63.146 and 63.147, the Periodic Report requirements contained in § 63.1335(e)(6) shall apply for the purposes of this subpart.

(6) When the Initial Notification Plan requirements in § 63.151(b) are referred to in § 63.146, the owner or operator of an affected source subject to this subpart need not comply for the purposes of this subpart.

(7) When the Implementation Plan requirements contained in § 63.151 are referred to in § 63.146, the owner or operator of an affected source subject to this subpart need not comply for the purposes of this subpart.

(8) When the term "range" is used in § 63.143(f), the term "level" shall be used instead for the purposes of this subpart. This level shall be determined using the procedures specified in § 63.1334.

(9) For the purposes of this subpart, owners or operators are not required to comply with the provisions of § 63.138(e)(2) which specify that owners or operators shall demonstrate that 95 percent of the mass of HAP, as listed in Table 9 of subpart G of this part, is removed from the wastewater stream or combination of wastewater streams by the procedure specified in § 63.145(i) for a biological treatment unit.

(10) For the purposes of this subpart, owners or operators are not required to comply with the provisions of § 63.138(j)(3) which specify that owners or operators shall use the procedures specified in appendix C of this part to demonstrate compliance when using a biological treatment unit.

(11) When the provisions of § 63.139(c)(1)(ii) or the provisions of § 63.145(e)(2)(ii)(B) specify that Method 18, 40 CFR part 60, appendix A, shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A, may be used for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A, shall comply with paragraphs (a)(11)(i) and (a)(11)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A, shall be the single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A, 40 CFR part 60, appendix A, is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(12) The compliance date for the affected source subject to the provisions of this section is specified in § 63.1311.

(b) For each affected source, the owner or operator shall comply with the requirements for maintenance wastewater in § 63.105, except that when § 63.105(a) refers to “organic HAPs,” the definition of organic HAP in § 63.1312 shall apply for the purposes of this subpart.

§ 63.1331 Equipment leak provisions.

(a) Except as provided in paragraphs (b) and (c) of this section, the owner or operator of each affected source shall comply with the requirements of sub-

part H of this part, with the differences noted in paragraphs (a)(1) through (a)(10) of this section.

(1) For an affected source producing polystyrene resin, the indications of liquids dripping, as defined in subpart H of this part, from bleed ports in pumps and agitator seals in light liquid service shall not be considered to be a leak. For purposes of this subpart, a “bleed port” is a technologically-required feature of the pump or seal whereby polymer fluid used to provide lubrication and/or cooling of the pump or agitator shaft exits the pump, thereby resulting in a visible dripping of fluid.

(2) The compliance date for the equipment leak provisions contained in this section is provided in § 63.1311.

(3) Owners and operators of an affected source subject to this subpart are not required to submit the Initial Notification required by § 63.182(a)(1) and § 63.182(b).

(4) The Notification of Compliance Status required by paragraphs § 63.182(a)(2) and § 63.182(c) shall be submitted within 150 days (rather than 90 days) of the applicable compliance date specified in § 63.1311 for the equipment leak provisions. Said notification can be submitted as part of the Notification of Compliance Status required by § 63.1335(e)(5).

(5) The Periodic Reports required by § 63.182(a)(3) and § 63.182(d) may be submitted as part of the Periodic Reports required by § 63.1335(e)(6).

(6) For an affected source producing PET, an owner or operator shall comply with the requirements of paragraphs (a)(6)(i) and (a)(6)(ii) of this section instead of with the requirements of § 63.169 for pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in light liquid or heavy liquid service; and instrumentation systems.

(i) A leak is determined to be detected if there is evidence of a potential leak found by visual, audible, olfactory, or any other detection method except that Method 21, 40 CFR part 60, appendix A shall not be used to determine if a leak is detected.

(ii)(A) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days

after it is detected, except as provided in § 63.171.

(B) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(C) Repaired shall mean that the visual, audible, olfactory, or other indications of a leak have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

(7) For each affected source producing PET, an owner or operator is not required to develop an initial list of identification numbers for the equipment identified in paragraph (a)(6) of this section (i.e., pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in light liquid or heavy liquid service; and instrumentation systems) as would otherwise be required under § 63.181(b)(1)(i).

(8) When the provisions of subpart H of this part specify that Method 18, 40 CFR part 60, appendix A, shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A, may be used for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A, shall comply with paragraphs (a)(8)(i) and (a)(8)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A, shall be the single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A, 40 CFR part 60, appendix A, is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(9) For purposes of this subpart, bottoms receivers and surge control vessels are not considered equipment for purposes of this section and are not subject to the requirements of subpart H of this part.

(10) The owner or operator of each affected source shall substitute the phrase "the provisions of subparts F, I, or JJJ of this part" for both the phrases "the provisions of subparts F or I of this part" and the phrase "the provisions of subpart F or I of this part" throughout §§ 63.163 and 63.168,

for the purposes of this subpart. In addition, the owner or operator of each affected source shall substitute the phrase "subparts F, I, and JJJ" for the phrase "subparts F and I" in § 63.174(c)(2)(iii), for the purposes of this subpart.

(b) The provisions of this section do not apply to each TPPU producing PET using a process other than a continuous terephthalic acid (TPA) high viscosity multiple end finisher process that is part of an affected source if all of the components in the TPPU are either in vacuum service or in heavy liquid service.

(1) Owners and operators of a TPPU exempted under paragraph (b) of this section shall retain at the facility information, data, and analyses used to demonstrate that all of the components in the exempted TPPU are either in vacuum service or in heavy liquid service. Such documentation shall include an analysis or demonstration that the process fluids do not meet the criteria of "in light liquid service" or "in gas or vapor service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(2) If changes occur at a TPPU exempted under paragraph (b) of this section such that all of the components in the TPPU are no longer either in vacuum service or in heavy liquid service (e.g., by either process changes or the addition of new components), the owner or operator shall comply with the provisions of this section for all of the components at the TPPU. The owner or operator shall submit a report within 180 days after the process change is made or the information regarding the process change is known to the owner or operator. This report may be included in the next Periodic Report, as specified in paragraph (a)(5) of this section. The following information shall be submitted:

(i) A description of the process change; and

(ii) A schedule for compliance with the provisions of § 63.1331(a), as specified in paragraphs (b)(2)(i)(A) and (b)(2)(i)(B) of this section.

(A) The owner or operator shall submit to the Administrator for approval a compliance schedule and a justification for the schedule.

(B) The Administrator shall approve the compliance schedule or request changes within 120 operating days of receipt of the compliance schedule and justification.

(c) The provisions of this section do not apply to each affected source producing PET using a continuous TPA high viscosity multiple end finisher process.

[61 FR 48229, Sept. 12, 1996, as amended at 62 FR 37722, July 15, 1997]

§ 63.1332 Emissions averaging provisions.

(a) This section applies to owners or operators of existing affected sources who seek to comply with § 63.1313(b) by using emissions averaging rather than following the provisions of §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, and 63.1330.

(1) The following emission point limitations apply to the use of these provisions:

(i) All emission points included in an emissions average shall be from the same affected source. There may be an emissions average for each affected source located at a plant site.

(ii)(A) If a plant site has only one affected source for which emissions averaging is being used to demonstrate compliance, the number of emission points allowed in the emissions average for said affected source is limited to twenty. This number may be increased by up to five additional emission points if pollution prevention measures are used to control five or more of the emission points included in the emissions average.

(B) If a plant site has two or more affected sources for which emissions averaging is being used to demonstrate compliance, the number of emission points allowed in the emissions averages for said affected sources is limited to twenty. This number may be increased by up to five additional emission points if pollution prevention measures are used to control five or more of the emission points included in the emissions averages.

(2) Compliance with the provisions of this section can be based on either organic HAP or TOC.

(3) For the purposes of these provisions, whenever Method 18, 40 CFR part 60, appendix A is specified within the paragraphs of this section or is specified by reference through provisions outside this section, Method 18 or Method 25A, 40 CFR part 60, appendix A may be used. The use of Method 25A, 40 CFR part 60, appendix A shall comply with paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A shall be the single organic HAP representing the largest percent by volume of the emissions.

(ii) The use of Method 25A, 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(b) Unless an operating permit application has been submitted, the owner or operator shall develop and submit for approval an Emissions Averaging Plan containing all of the information required in § 63.1335(e)(4) for all emission points to be included in an emissions average.

(c) Paragraphs (c)(1) through (c)(5) of this section describe the emission points that can be used to generate emissions averaging credits if control was applied after November 15, 1990, and if sufficient information is available to determine the appropriate value of credits for the emission point. Paragraph (c)(6) of this section discusses the use of pollution prevention in generating emissions averaging credits.

(1) Storage vessels, batch process vents, aggregate batch vent streams, continuous process vents subject to § 63.1315, and process wastewater streams that are determined to be Group 2 emission points. The term “continuous process vents subject to § 63.1315” includes continuous process vents subject to § 63.1316 (b)(1)(iii), (b)(2)(iii), and (c)(2), which reference § 63.1315.

(2) Continuous process vents located in the collection of material recovery sections within the affected source at an existing affected source producing PET using a continuous dimethyl terephthalate process subject to § 63.1316(b)(1)(i) where the uncontrolled organic HAP emissions from said continuous process vents are equal to or less than 0.12 kg organic HAP per Mg of product. These continuous process vents shall be considered Group 2 emission points for the purposes of this section.

(3) Storage vessels, continuous process vents subject to § 63.1315, and process wastewater streams that are determined to be Group 1 emission points and that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section.

(4) Batch process vents and aggregate batch vent streams that are determined to be Group 1 emission points and that are controlled to a level more stringent than the applicable standard.

(5) Continuous process vents subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) located in the collection of process sections within the affected source, as specified in paragraphs (c)(5)(i) through (c)(5)(ii) of this section. The continuous process vents identified in paragraphs (c)(5)(i) through (c)(5)(ii) of this section shall be considered to be Group 1 emission points for the purposes of this section.

(i) Continuous process vents subject to § 63.1316(b)(1)(i) located in the collection of material recovery sections within the affected source where the uncontrolled organic HAP emissions for said continuous process vents are greater than 0.12 kg organic HAP per Mg of product and said continuous process vents are controlled to a level more stringent than the applicable standard.

(ii) Continuous process vents subject to § 63.1316(b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) located in the collection of process sections within the affected source where the uncontrolled organic HAP

emissions from said continuous process vents are controlled to a level more stringent than the applicable standard.

(6) The percent reduction for any storage vessel, batch process vent, aggregate batch vent stream, continuous process vent, and process wastewater stream from which emissions are reduced by pollution prevention measures shall be determined using the procedures specified in paragraph (j) of this section.

(i) For a Group 1 storage vessel, batch process vent, aggregate batch vent stream, continuous process vent, or process wastewater stream, the pollution prevention measure must reduce emissions more than if the applicable reference control technology or standard had been applied to the emission point instead of the pollution prevention measure, except as provided in paragraph (c)(6)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 storage vessel, batch process vent, aggregate batch vent stream, continuous process vent, or process wastewater stream, the pollution prevention measure alone does not have to reduce emissions more than the applicable reference control technology or standard, but the combination of the pollution prevention measure and other controls must reduce emissions more than if the applicable reference control technology or standard had been applied instead of the pollution prevention measure.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990, cannot be used to generate credits unless the level of control is increased after November 15, 1990. In this case, credit will be allowed only for the increase in control after November 15, 1990.

(2) Group 1 emission points, identified in paragraph (c)(3) of this section, that are controlled by a reference control technology cannot be used to generate credits unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned

according to the procedures in paragraph (i) of this section.

(3) Emission points for nonoperating TPPU cannot be used to generate credits. TPPU that are shutdown cannot be used to generate credits or debits.

(4) Maintenance wastewater cannot be used to generate credits. Wastewater streams treated in biological treatment units cannot be used to generate credits. These two types of wastewater cannot be used to generate credits or debits. For the purposes of this section, the terms wastewater and wastewater stream are used to mean process wastewater.

(5) Emission points controlled to comply with a State or Federal rule other than this subpart cannot be used to generate credits, unless the level of control has been increased after November 15, 1990, to a level above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the emission point is subsequently made subject to a State or Federal rule other than this subpart, the emission point can continue to generate emissions averaging credit for the purpose of complying with the previously approved emissions average.

(e) For all emission points included in an emissions average, the owner or operator shall perform the following tasks:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology or standard for those emission points. Said Group 1 emission points are identified in paragraphs (c)(3) through (c)(5) of this section. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 and Group 2 emission points that are over-controlled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit cal-

culatation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The owner or operator may choose to include more than the required number of credit-generating emission points in an emissions average in order to increase the likelihood of being in compliance.

(ii) The initial demonstration in the Emissions Averaging Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions. After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in § 63.1335(e)(6). Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by § 63.1335(e)(6)(vi)(D)(2).

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions during the following periods:

(1) Emissions during periods of start-up, shutdown, and malfunction, as described in the Start-up, Shutdown, and Malfunction Plan.

(2) Emissions during periods of monitoring excursions, as defined in

§ 63.1334(d). For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(2)(i) through (f)(2)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in paragraph (l) of this section.

(g) Debits are generated by the difference between the actual emissions

from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology or standard and the emissions allowed for the Group 1 emission point. Said Group 1 emission points are identified in paragraphs (c)(3) through (c)(5) of this section. Debits shall be calculated as follows:

(1) Source-wide debits shall be calculated using Equation 28 of this subpart. Debits and all terms of Equation 28 of this subpart are in units of megagrams per month.

$$\begin{aligned} \text{Debits} = & \sum_{i=1}^n \left(\text{ECPV}_{i\text{ACTUAL}} - (0.02)\text{ECPV}_{iu} \right) \\ & + \sum_{j=1}^n \left(\text{ECPVS}_{j\text{ACTUAL}} - \text{ECPVS}_{j\text{STD}} \right) + \sum_{i=1}^n \left(\text{ES}_{i\text{ACTUAL}} - (b)\text{ES}_{iu} \right) \\ & + \sum_{i=1}^n \left(\text{EWW}_{i\text{ACTUAL}} - \text{EWW}_{ic} \right) + \sum_{i=1}^n \left(\text{EBPV}_{i\text{ACTUAL}} - (0.10)\text{EBPV}_{iu} \right) \quad [\text{Eq. 28}] \\ & + \sum_{i=1}^n \left(\text{EABV}_{i\text{ACTUAL}} - (0.10)\text{EABV}_{iu} \right) \end{aligned}$$

where:

$\text{ECPV}_{i\text{ACTUAL}}$ = Emissions from each Group 1 continuous process vent i subject to § 63.1315 that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. $\text{ECPV}_{i\text{ACTUAL}}$ is calculated according to paragraph (g)(2) of this section.

$(0.02)\text{ECPV}_{iu}$ = Emissions from each Group 1 continuous process vent i subject to § 63.1315 if the applicable reference control technology had been applied to the uncontrolled emissions. ECPV_{iu} is calculated according to paragraph (g)(2) of this section.

$\text{ECPVS}_{j\text{ACTUAL}}$ = Emissions from Group 1 continuous process vents subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i),

(b)(2)(ii), or (c)(1) located in the collection of process sections j within the affected source that are uncontrolled or controlled to a level less stringent than the applicable standard. $\text{ECPVS}_{j\text{ACTUAL}}$ is calculated according to paragraph (g)(3) of this section.

$\text{ECPVS}_{j\text{STD}}$ = Emissions from Group 1 continuous process vents subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) located in the collection of process sections j within the affected source if the applicable standard had been applied to the uncontrolled emissions. $\text{ECPVS}_{j\text{STD}}$ is calculated according to paragraph (g)(3) of this section.

$\text{ES}_{i\text{ACTUAL}}$ = Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level

less stringent than the applicable reference control technology or standard. $ES_{iACTUAL}$ is calculated according to paragraph (g)(4) of this section.

(BL) ES_{iu} =Emissions from each Group 1 storage vessel i if the applicable reference control technology or standard had been applied to the uncontrolled emissions. ES_{iu} is calculated according to paragraph (g)(4) of this section. For calculating emissions, BL=0.05 for each Group 1 storage vessel i subject to § 63.1314(a); and BL=0.02 for each storage vessel i subject to § 63.1314(c).

$EWV_{iACTUAL}$ =Emissions from each Group 1 wastewater stream i that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. $EWV_{iACTUAL}$ is calculated according to paragraph (g)(5) of this section.

EWV_{ic} =Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. EWV_{ic} is calculated according to paragraph (g)(5) of this section.

$EBPV_{iACTUAL}$ =Emissions from each Group 1 batch process vent i that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. $EBPV_{iACTUAL}$ is calculated according to paragraph (g)(6) of this section.

(0.10) $EBPV_{iu}$ =Emissions from each Group 1 batch process vent i if the

applicable reference control technology had been applied to the uncontrolled emissions. $EBPV_{iu}$ is calculated according to paragraph (g)(6) of this section.

$EABV_{iACTUAL}$ =Emissions from each Group 1 aggregate batch vent stream i that is uncontrolled or is controlled to a level less stringent than the applicable reference control technology. $EBPV_{iACTUAL}$ is calculated according to paragraph (g)(7) of this section.

(0.10) $EABV_{iu}$ =Emissions from each Group 1 aggregate batch vent stream i if the applicable reference control technology had been applied to the uncontrolled emissions. $EBPV_{iu}$ is calculated according to paragraph (g)(7) of this section.

n=The number of emission points being included in the emissions average.

(2) Emissions from continuous process vents subject to § 63.1315 shall be calculated as follows:

(i) For purposes of determining continuous process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for continuous process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A, 40 CFR part 60, appendix A, shall be used for selection of the sampling site.

(ii) $ECPV_{iu}$ for each continuous process vent i shall be calculated using Equation 29 of this subpart.

$$ECPV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right) \quad [\text{Eq. 29}]$$

where:

$ECPV_{iu}$ =Uncontrolled continuous process vent emission rate from continuous process vent i, megagrams per month.

Q=Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D, 40

CFR part 60, appendix A, as appropriate.

h=Monthly hours of operation during which positive flow is present in the continuous process vent, hours per month.

C_j =Concentration, parts per million by volume, dry basis, of organic HAP j

as measured by Method 18, 40 CFR part 60, appendix A.
 Mj=Molecular weight of organic HAP j,
 gram per gram-mole.
 n=Number of organic HAP in stream.

(A) The values of Q and Cj shall be determined during a performance test conducted under representative operating conditions. The values of Q and Cj shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q and Cj are no longer representative, a new performance test shall be conducted to determine new

representative values of Q and Cj. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $ECPV_{iACTUAL}$:

(A) If the continuous process vent is not controlled by a control device or pollution prevention measure, $ECPV_{iACTUAL}=ECPV_{iu}$, where $ECPV_{iu}$ is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the continuous process vent is controlled using a control device or a pollution prevention measure achieving less than 98 percent reduction, calculate $ECPV_{iACTUAL}$ using Equation 30 of this subpart.

$$ECPV_{iACTUAL} = ECPV_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 30}]$$

(1) The percent reduction shall be measured according to the procedures in § 63.116 if a combustion control device is used. For a flare meeting the criteria in § 63.116(a), or a boiler or process heater meeting the criteria in § 63.116(b), the percent reduction shall be 98 percent. If a noncombustion control device is used, percent reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(2) For determining debits from Group 1 continuous process vents, product recovery devices shall not be considered control devices and cannot be assigned a percent reduction in calculating $ECPV_{iACTUAL}$. The sampling site for measurement of uncontrolled emissions is after the final product recovery device. However, as provided in § 63.113(a)(3), a Group 1 continuous process vent may add sufficient product recovery to raise the TRE index value above 1.0 or, for Group 1 continuous process vents at an existing affected source producing MBS, above

3.7, thereby becoming a Group 2 continuous process vent. Such a continuous process vent would not be a Group 1 continuous process vent and would, therefore, not be included in determining debits under this paragraph (g)(2)(iii)(B)(2).

(3) Procedures for calculating the percent reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from continuous process vents located in the collection of process sections within the affected source subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) shall be calculated as follows:

(i) The total organic HAP emissions from continuous process vents located in the collection of process sections j within the affected source, $ECPVS_{jACTUAL}$, shall be calculated as follows. The procedures in paragraph (g)(2)(iii) of this section shall be used to determine the organic HAP emissions for each individual continuous process vent, except that paragraph (g)(2)(iii)(B)(2) of this section shall not apply and the sampling site shall be

after those recovery devices installed as part of normal operation; before any add-on control devices (i.e., those required by regulation); and prior to discharge to the atmosphere. Then, individual continuous process vent emissions shall be summed to determine $ECPVS_{jACTUAL}$.

(ii)(A) $ECPVS_{jstd}$ shall be calculated using Equation 31 of this subpart.

$$ECPVS_{jstd} = (EF_{std})(PP_j) \quad [Eq. 31]$$

where:

$ECPVS_{jstd}$ = Emissions if the applicable standard had been applied to the uncontrolled emissions, megagrams per month.

EF_{std} = 0.000018 Mg organic HAP/Mg of product, if the collection of process sections within the affected source is subject to § 63.1316(b)(1)(i).

= 0.00002 Mg organic HAP/Mg of product, if the collection of process sections within the affected source is subject to § 63.1316(b)(1)(ii) or (b)(2)(ii).

= 0.00004 Mg organic HAP/Mg of product, if the collection of process sections within the affected source is subject to § 63.1316(b)(2)(i).

= 0.0000036 Mg organic HAP/Mg of product, if the collection of process sections within the affected source is subject to § 63.1316(c)(1).

PP_j = Polymer produced, Mg/month, for the collection of process sections j within the affected source, as calculated according to paragraph (g)(3)(ii)(B) of this section.

(B) The amount of polymer produced, Mg per month, for the collection of process sections j within the affected source shall be determined by determining the weight of polymer pulled from the process line(s) during a 30-day period. The polymer produced shall be determined by direct measurement or by an alternate methodology, such as materials balance. If an alternate methodology is used, a description of

the methodology, including all procedures, data, and assumptions shall be submitted as part of the Emissions Averaging Plan required by § 63.1335(e)(4).

(C) Alternatively, $ECPVS_{jstd}$ for continuous process vents located in the collection of process sections within the affected source subject to § 63.1316(c)(1) may be calculated using the procedures in paragraph (g)(2)(i) and (g)(2)(ii) of this section to determine the organic HAP emissions for each individual continuous process vent, except that the sampling site shall be after recovery devices installed as part of normal operation; before any add-on control devices (i.e., those required by regulation); and prior to discharge to the atmosphere. Then, individual continuous process vent emissions shall be summed and multiplied by 0.02 to determine $ECPVS_{jstd}$.

(4) Emissions from storage vessels shall be calculated using the procedures specified in § 63.150(g)(3).

(5) Emissions from wastewater streams shall be calculated using the procedures in § 63.150(g)(5).

(6) Emissions from batch process vents shall be calculated as follows:

(i) $EBPV_{iu}$ for each batch process vent i shall be calculated using the procedures specified in § 63.1323(b).

(ii) The following procedures and equations shall be used to determine $EBPV_{iACTUAL}$:

(A) If the batch process vent is not controlled by a control device or pollution prevention measure, $EBPV_{iACTUAL} = EBPV_{iu}$, where $EBPV_{iu}$ is calculated using the procedures in § 63.1323(b).

(B) If the batch process vent is controlled using a control device or a pollution prevention measure achieving less than 90 percent reduction for the batch cycle, calculate $EBPV_{iACTUAL}$ using Equation 32 of this subpart, where percent reduction is for the batch cycle.

$$EBPV_{iACTUAL} = EBPV_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [Eq. 32]$$

(1) The percent reduction for the batch cycle shall be calculated according to the procedures in § 63.1325(c)(2).

(2) The percent reduction for control devices shall be calculated according to the procedures in § 63.1325 (c)(2)(i) through (c)(2)(iii).

(3) The percent reduction of pollution prevention measures shall be calculated using the procedures specified in paragraph (j) of this section.

(7) Emissions from aggregate batch vent streams shall be calculated as follows:

(i) For purposes of determining aggregate batch vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be before any control device and before discharge to the atmosphere. Method 1 or 1A, 40 CFR part 60, appendix A, shall be used for selection of the sampling site.

(ii) $EABV_{iu}$ for each aggregate batch vent stream i shall be calculated using Equation 33 of this subpart.

$$EABV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right) \quad [\text{Eq. 33}]$$

where:

$EABV_{iu}$ = Uncontrolled aggregate batch vent stream emission rate from aggregate batch vent stream i , megagrams per month.

Q = Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D, 40 CFR part 60, appendix A, as appropriate.

h = Monthly hours of operation during which positive flow is present from the aggregate batch vent stream, hours per month.

C_j = Concentration, parts per million by volume, dry basis, of organic HAP j as measured by Method 18, 40 CFR part 60, appendix A.

M_j = Molecular weight of organic HAP j , gram per gram-mole.

n = Number of organic HAP in the stream.

(A) The values of Q and C_j shall be determined during a performance test conducted under representative operating conditions. The values of Q and C_j shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(7)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q and C_j are no longer representative, a new performance test shall be conducted to determine new representative values of Q and C_j . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $EABV_{iACTUAL}$:

(A) If the aggregate batch vent stream is not controlled by a control device or pollution prevention measure, $EABV_{iACTUAL} = EABV_{iu}$, where $EABV_{iu}$ is calculated according to the procedures in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

(B) If the aggregate batch vent stream is controlled using a control device or a pollution prevention measure achieving less than 90 percent reduction, calculate $EABV_{iACTUAL}$ using Equation 34 of this subpart.

$$\text{EABV}_{\text{iACTUAL}} = \text{EABV}_{\text{iu}} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 34}]$$

(f) The percent reduction for control devices shall be determined according to the procedures in §63.1325(e).

(g) The percent reduction for pollution prevention measures shall be calculated according to the procedures specified in paragraph (j) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from that Group 1 or Group 2

emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Said Group 1 and Group 2 emission points are identified in paragraphs (c)(1) through (c)(5) of this section. Credits shall be calculated using Equation 35 of this subpart.

(i) Sourcewide credits shall be calculated using Equation 35 of this subpart.

$$\begin{aligned}
\text{Credits} = & D \sum_{i=1}^n ((0.02) \text{ECPV1}_{i\text{u}} - \text{ECPV1}_{i\text{ACTUAL}}) \\
& + D \sum_{j=1}^n (\text{ECPVS1}_{j\text{STD}} - \text{ECPVS1}_{j\text{ACTUAL}}) \\
& + D \sum_{i=1}^m (\text{ECPV2}_{i\text{BASE}} - \text{ECPV2}_{i\text{ACTUAL}}) \\
& + D \sum_{j=1}^m (\text{ECPVS2}_{j\text{BASE}} - \text{ECPVS2}_{j\text{ACTUAL}}) \\
& + D \sum_{i=1}^n ((\text{BL}) \text{ES1}_{i\text{u}} - \text{ES1}_{i\text{ACTUAL}}) + D \sum_{i=1}^m (\text{ES2}_{i\text{BASE}} - \text{ES2}_{i\text{ACTUAL}}) \\
& + D \sum_{i=1}^n (\text{EWW1}_{i\text{c}} - \text{EWW1}_{i\text{ACTUAL}}) \quad [\text{Eq. 35}] \\
& + D \sum_{i=1}^m (\text{EWW2}_{i\text{BASE}} - \text{EWW2}_{i\text{ACTUAL}}) \\
& + D \sum_{i=1}^n ((0.10) \text{EBPV1}_{i\text{u}} - \text{EBPV1}_{i\text{ACTUAL}}) \\
& + D \sum_{i=1}^n ((0.10) \text{EABV1}_{i\text{u}} - \text{EABV1}_{i\text{ACTUAL}}) \\
& + D \sum_{i=1}^m (\text{EBPV2}_{i\text{BASE}} - \text{EBPV2}_{i\text{ACTUAL}}) \\
& + D \sum_{i=1}^m (\text{EABV2}_{i\text{BASE}} - \text{EABV2}_{i\text{ACTUAL}})
\end{aligned}$$

Credits and all terms of Equation 35 of this subpart are in units of megagrams per month, the baseline date is November 15, 1990.

where:

D=Discount factor=0.9 for all credit generating emission points except those controlled by a pollution prevention measure; discount factor=1.0 for each credit generating emission point controlled by a pol-

lution prevention measure (i.e., no discount provided).
 $\text{ECPV1}_{i\text{ACTUAL}}$ =Emissions for each Group 1 continuous process vent i subject to §63.1315 that is controlled to a level more stringent than the reference control technology. $\text{ECPV1}_{i\text{ACTUAL}}$ is calculated according to paragraph (h)(2) of this section.

(0.02) $ECPV1_{iu}$ = Emissions from each Group 1 continuous process vent i subject to § 63.1315 if the applicable reference control technology had been applied to the uncontrolled emissions. $ECPV1_{iu}$ is calculated according to paragraph (h)(2) of this section.

$ECPVS1_{jSTD}$ = Emissions from Group 1 continuous process vents subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) located in the collection of process sections j within the affected source if the applicable standard had been applied to the uncontrolled emissions. $ECPVS1_{jSTD}$ is calculated according to paragraph (h)(3) of this section.

$ECPVS1_{jACTUAL}$ = Emissions from Group 1 continuous process vents subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) located in the collection of process sections j within the affected source that are controlled to a level more stringent than the applicable standard. $ECPVS1_{jACTUAL}$ is calculated according to paragraph (h)(3) of this section.

$ECPV2_{iACTUAL}$ = Emissions from each Group 2 continuous process vent i subject to § 63.1315 that is controlled. $ECPV2_{iACTUAL}$ is calculated according to paragraph (h)(2) of this section.

$ECPV2_{iBASE}$ = Emissions from each Group 2 continuous process vent i subject to § 63.1315 at the baseline date. $ECPV2_{iBASE}$ is calculated according to paragraph (h)(2) of this section.

$ECPVS2_{jBASE}$ = Emissions from Group 2 continuous process vents subject to § 63.1316(b)(1)(i) located in the collection of material recovery sections j within the affected source at the baseline date. $ECPVS2_{jBASE}$ is calculated according to paragraph (h)(3) of this section.

$ECPVS2_{jACTUAL}$ = Emissions from Group 2 continuous process vents subject to § 63.1316(b)(1)(i) located in the collection of material recovery sections j within the affected source that are controlled. $ECPVS2_{jACTUAL}$ is calculated according to paragraph (h)(3) of this section.

$ES1_{iACTUAL}$ = Emissions from each Group 1 storage vessel i that is controlled

to a level more stringent than the applicable reference control technology or standard. $ES1_{iACTUAL}$ is calculated according to paragraph (h)(4) of this section.

(BL) $ES1_{iu}$ = Emissions from each Group 1 storage vessel i if the applicable reference control technology or standard had been applied to the uncontrolled emissions. $ES1_{iu}$ is calculated according to paragraph (h)(4) of this section. For calculating these emissions, $BL=0.05$ for each Group 1 storage vessel i subject to § 63.1314(a); and $BL=0.02$ for each storage vessel i subject to § 63.1314(c).

$ES2_{iACTUAL}$ = Emissions from each Group 2 storage vessel i that is controlled. $ES2_{iACTUAL}$ is calculated according to paragraph (h)(4) of this section.

$ES2_{iBASE}$ = Emissions from each Group 2 storage vessel i at the baseline date. $ES2_{iBASE}$ is calculated according to paragraph (h)(4) of this section.

$EWV1_{iACTUAL}$ = Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology. $EWV1_{iACTUAL}$ is calculated according to paragraph (h)(5) of this section.

$EWV1_{ic}$ = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. $EWV1_{ic}$ is calculated according to paragraph (h)(5) of this section.

$EWV2_{iACTUAL}$ = Emissions from each Group 2 wastewater stream i that is controlled. $EWV2_{iACTUAL}$ is calculated according to paragraph (h)(5) of this section.

$EWV2_{iBASE}$ = Emissions from each Group 2 wastewater stream i at the baseline date. $EWV2_{iBASE}$ is calculated according to paragraph (h)(5) of this section.

(0.10) $EBPV1_{iu}$ = Emissions from each Group 1 batch process vent i if the applicable reference control technology had been applied to the uncontrolled emissions. $EBPV1_{iu}$ is calculated according to paragraph (h)(6) of this section.

$EBPV1_{iACTUAL}$ = Emissions from each Group 1 batch process vent i that is

controlled to a level more stringent than the reference control technology. $EBPV1_{iACTUAL}$ is calculated according to paragraph (h)(6) of this section.

(0.10) $EABV1_{iu}$ =Emissions from each Group 1 aggregate batch vent stream i if the applicable reference control technology had been applied to the uncontrolled emissions. $EABV1_{iu}$ is calculated according to paragraph (h)(7) of this section.

$EABV1_{iACTUAL}$ =Emissions from each Group 1 aggregate batch vent stream i that is controlled to a level more stringent than the reference control technology. $EABV1_{iACTUAL}$ is calculated according to paragraph (h)(7) of this section.

$EBPV2_{iBASE}$ =Emissions from each Group 2 batch process vent i at the baseline date. $EBPV2_{iBASE}$ is calculated according to paragraph (h)(6) of this section.

$EBPV2_{iACTUAL}$ =Emissions from each Group 2 batch process vent i that is controlled. $EBPV2_{iACTUAL}$ is calculated according to paragraph (h)(6) of this section.

$EABV2_{iBASE}$ =Emissions from each Group 2 aggregate batch vent stream i at the baseline date. $EABV2_{iBASE}$ is calculated according to paragraph (h)(7) of this section.

$EABV2_{iACTUAL}$ =Emissions from each Group 2 aggregate batch vent stream i that is controlled. $EABV2_{iACTUAL}$ is calculated according to paragraph (h)(7) of this section.

n=Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for continuous process vents, batch process vents, aggregate batch vent streams, storage vessels, wastewater streams, or the collection of process sections within the affected source.

m=Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for continuous process vents, batch process vents, aggregate batch vent streams, storage vessels, wastewater streams, or the

collection of process sections within the affected source.

(i) Except as specified in paragraph (h)(1)(iv) of this section, for an emission point controlled using a reference control technology, the percent reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be as determined as described in paragraph (j) of this section.

(iv) For Group 1 and Group 2 batch process vents and Group 1 and Group 2 aggregate batch vent streams, the percent reduction for calculating credits shall be the percent reduction determined according to the procedures in paragraphs (h)(6)(ii) and (h)(6)(iii) of this section for batch process vents and paragraphs (h)(7)(ii) and (h)(7)(iii) of this section for aggregate batch vent streams.

(2) Emissions from continuous process vents subject to § 63.1315 shall be determined as follows:

(i) Uncontrolled emissions from Group 1 continuous process vents ($ECPV1_{iu}$) shall be calculated according to the procedures and equation for $ECPV_{iu}$ in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from Group 1 continuous process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction ($ECPV1_{iACTUAL}$) shall be calculated using Equation 36 of this subpart.

$$\text{ECPV1}_{\text{iACTUAL}} = \text{ECPV1}_{\text{iu}} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right) \quad [\text{Eq. 36}]$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 continuous process vents ($\text{ECPV2}_{\text{iACTUAL}}$):

(A) For a Group 2 continuous process vent controlled by a control device, a

recovery device applied as a pollution prevention project, or a pollution prevention measure, where the control achieves a percent reduction less than or equal to 98 percent reduction, use Equation 37 of this subpart.

$$\text{ECPV2}_{\text{iACTUAL}} = \text{ECPV2}_{\text{iu}} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 37}]$$

(1) ECPV2_{iu} shall be calculated according to the equations and procedures for ECPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section, except as provided in paragraph (h)(2)(iii)(A)(3) of this section.

(2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section, except as provided in paragraph (h)(2)(iii)(A)(4) of this section.

(3) If a recovery device was added as part of a pollution prevention project, ECPV2_{iu} shall be calculated prior to that recovery device. The equation for ECPV_{iu} in paragraph (g)(2)(ii) of this section shall be used to calculate

ECPV2_{iu} ; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(4) If a recovery device was added as part of a pollution prevention project, the percent reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 continuous process vent controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction, use Equation 38 of this subpart.

$$\text{ECPV2}_{\text{iACTUAL}} = \text{ECPV2}_{\text{iu}} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right) \quad [\text{Eq. 38}]$$

(iv) Emissions from Group 2 continuous process vents at baseline shall be calculated as follows:

(A) If the continuous process vent was uncontrolled on November 15, 1990, $\text{ECPV2}_{\text{iBASE}} = \text{ECPV2}_{\text{iu}}$ and shall be cal-

culated according to the procedures and equation for ECPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the continuous process vent was controlled on November 15, 1990, use Equation 39 of this subpart.

$$\text{ECPV2}_{\text{iBASE}} = \text{ECPV2}_{\text{iu}} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 39}]$$

(f) $ECPV2_{iu}$ is calculated according to the procedures and equation for $ECPV_{iu}$ in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(2) The percent reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(f) through (g)(2)(iii)(B)(3) of this section.

(C) If a recovery device was added as part of a pollution prevention project initiated after November 15, 1990, $ECPV2_{iBASE} = ECPV2_{iu}$, where $ECPV2_{iu}$ is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

(3) Emissions from continuous process vents subject to § 63.1316(b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) shall be determined as follows:

(i) Emissions from Group 1 continuous process vents located in the collection of process sections j within the affected source if the applicable standard had been applied to the uncontrolled emissions ($ECPVS1_{jstd}$) shall be calculated according to paragraph (g)(3)(ii) of this section.

(ii) Actual emissions from Group 1 continuous process vents located in the collection of process sections j within the affected source controlled to a level more stringent than the applicable standard ($ECPVS1_{jACTUAL}$) shall be calculated using the procedures in paragraphs (g)(3)(ii)(A) and (g)(3)(ii)(B) of this section, except that the actual emission level, Mg organic HAP/Mg of product, shall be used as EF_{std} in Equation 31 of this subpart. Further, $ECPVS1_{jACTUAL}$ for continuous process vents subject to § 63.1316(c)(1) controlled in accordance with § 63.1316(c)(1)(iii) shall be calculated using the procedures in paragraph (h)(2)(ii) of this section for individual continuous process vents and then summing said emissions to get $ECPVS1_{jACTUAL}$, except that the sampling site shall be after recovery devices installed as part of normal operation; before any add-on control devices (i.e., those required by regulation); and prior to discharge to the atmosphere.

(iii) Actual emissions from Group 2 continuous process vents subject to § 63.1316(b)(1)(i) located in the collection of material recovery sections j within the affected source ($ECPVS2_{jACTUAL}$) shall be calculated using the procedures in paragraphs (g)(3)(ii)(A) and (g)(3)(ii)(B) of this section, except that the actual emission level, Mg organic HAP/Mg of product, shall be used as EF_{std} in Equation 31 of this subpart.

(iv) Emissions from Group 2 continuous process vents subject to § 63.1316(b)(1)(i) located in the collection of material recovery sections j within the affected source at baseline ($ECPVS2_{jBASE}$) shall be calculated using the procedures in paragraphs (g)(3)(ii)(A) and (g)(3)(ii)(B) of this section, except that the actual emission level, Mg organic HAP/Mg of product, at baseline shall be used as EF_{std} in Equation 31 of this subpart.

(4)(i) Emissions from storage vessels shall be calculated using the procedures specified in § 63.150(h)(3).

(ii) Actual emissions from Group 1 storage vessels at an existing affected source producing ASA/AMSAN subject to § 63.1314(c) using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction shall be calculated using the procedures specified in § 63.150(h)(3)(ii).

(5) Emissions from wastewater streams shall be calculated using the procedures specified in § 63.150(h)(5).

(6) Emissions from batch process vents shall be determined as follows:

(i) Uncontrolled emissions from Group 1 batch process vents ($EBPV1_{iu}$) shall be calculated using the procedures § 63.1323(b).

(ii) Actual emissions from Group 1 batch process vents controlled to a level more stringent than the reference control technology ($EBPV1_{iACTUAL}$) shall be calculated using Equation 40 of this subpart, where percent reduction is for the batch cycle.

$$EBPV1_{iACTUAL} = EBPV1_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 40}]$$

(A) The percent reduction for the batch cycle shall be calculated according to the procedures in § 63.1325(c)(2).

(B) The percent reduction for control devices shall be determined according to the procedures in § 63.1325(c)(2)(i) through (c)(2)(iii).

(C) The percent reduction of pollution prevention measures shall be calculated using the procedures specified

in paragraph (j) of this section.

(iii) Actual emissions from Group 2 batch process vents ($EBPV2_{iACTUAL}$) shall be calculated using Equation 41 of this subpart and the procedures in paragraphs (h)(6)(ii)(A) through (h)(6)(ii)(C) of this section. $EBPV2_{iu}$ shall be calculated using the procedures specified in § 63.1323(b).

$$EBPV2_{iACTUAL} = EBPV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 41}]$$

(iv) Emissions from Group 2 batch process vents at baseline ($EBPV2_{iBASE}$) shall be calculated as follows:

(A) If the batch process vent was uncontrolled on November 15, 1990, $EBPV2_{iBASE} = EBPV2_{iu}$ and shall be calculated using the procedures specified in § 63.1323(b).

(B) If the batch process vent was controlled on November 15, 1990, use Equation 42 of this subpart and the procedures in paragraphs (h)(6)(ii)(A) through (h)(6)(ii)(C) of this section. $EBPV2_{iu}$ shall be calculated using the procedures specified in § 63.1323(b).

$$EBPV2_{iBASE} = EBPV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 42}]$$

(7) Emissions from aggregate batch vent streams shall be determined as follows:

(i) Uncontrolled emissions from Group 1 aggregate batch vent streams ($EABV1_{iu}$) shall be calculated according to the procedures and equation for

$EABV1_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

(ii) Actual emissions from Group 1 aggregate batch vent streams controlled to a level more stringent than the reference control technology ($EABV1_{iACTUAL}$) shall be calculated using Equation 43 of this subpart.

$$EABV1_{iACTUAL} = EABV1_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 43}]$$

(A) The percent reduction for control devices shall be determined according to the procedures in § 63.1325(e).

(B) The percent reduction of pollution prevention measures shall be calculated using the procedures specified in paragraph (j) of this section.

(iii) Actual emissions from Group 2 aggregate batch vent streams

($EABV2_{iACTUAL}$) shall be calculated using Equation 44 of this subpart and the procedures in paragraphs (h)(7)(ii)(A) through (h)(7)(ii)(B) of this section. $EABV2_{iu}$ shall be calculated according to the equations and procedures for $EABV1_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

$$EABV2_{iACTUAL} = EABV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 44}]$$

(iv) Emissions from Group 2 aggregate batch vent streams at baseline shall be calculated as follows:

(A) If the aggregate batch vent stream was uncontrolled on November 15, 1990, $EABV2_{iBASE} = EABV2_{iu}$ and shall be calculated according to the procedures and equation for $EABV_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

(B) If the aggregate batch vent stream was controlled on November 15, 1990, use Equation 45 of this subpart and the procedures in paragraphs (h)(7)(ii)(A) through (h)(7)(ii)(B) of this section. $EABV2_{iu}$ shall be calculated according to the equations and procedures for $EABV_{iu}$ in paragraphs (g)(7)(i) and (g)(7)(ii) of this section.

$$EABV2_{iBASE} = EABV2_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right) \quad [\text{Eq. 45}]$$

(i) The following procedures shall be followed to establish nominal efficiencies for emission controls for storage vessels, continuous process vents, and process wastewater streams. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percent reductions than the percent efficiencies assigned to the reference control technologies in § 63.111.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant-site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Director of the EPA Office of Air Quality Planning and Standards in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance.

(ii) Description of the control technology including design specifications.

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA Method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented.

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 operating days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 operating days of the submittal of sufficient data whether a

control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may grant permission to take emission credits for use of the control technology. The Administrator may also impose requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) of this section can be submitted to the permitting authority for the affected source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority as part of an operating permit application or modification. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the application, the permitting authority believes the control technology has broad applicability for use by other affected sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percent reduction) of pollution prevention measures for storage vessels, continuous process vents, batch process vents, aggregate batch vent streams, and wastewater streams:

(1) A pollution prevention measure is any practice that meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions, while the same product is produced.

(ii) Pollution prevention measures may include: substitution of feedstocks that reduce organic HAP emissions; alterations to the production process to reduce the volume of materials released to the environment; equipment modifications; housekeeping measures; and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990, can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percent reduction used in the equations in paragraphs (g)(2) through (g)(7) of this section and paragraphs (h)(2) through (h)(7) of this section is the percent difference between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) Equation 46 of this subpart shall be used to calculate the percent reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B - \frac{(E_{pp})(P_B)}{P_{pp}}}{E_B} 100\% \quad [\text{Eq. 46}]$$

where:

Percent reduction=Efficiency of pollution prevention measure (percent organic HAP reduction).

E_B =Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

E_{pp} =Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in either paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

P_B =Monthly production before the pollution prevention measure, megagrams per month, during the

same period over which E_B is calculated.

P_{pp} =Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure, E_B , shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2) and (g)(3) of this section for continuous process vents, paragraph (g)(4) of this section for storage vessels, paragraph (g)(6) of this section for batch process vents, and paragraph (g)(7) of this section for aggregate batch vent streams.

(B) For wastewater, E_B shall be calculated using Equation 47 of this subpart.

$$E_B = \sum_{i=1}^n \left[\left(6.0 \times 10^{-8} \right) Q_{Bi} H_{Bi} \sum_{m=1}^s Fe_m \text{HAP}_{Bim} \right] \quad [\text{Eq. 47}]$$

where:

n =Number of wastewater streams.

Q_{Bi} =Average flow rate for wastewater stream i before the pollution prevention measure, defined and determined according to § 63.144(c)(3), liters per minute, before implementation of the pollution prevention measure.

H_{Bi} =Number of hours per month that wastewater stream i was discharged before the pollution prevention measure, hours per month.

s =Total number of organic HAP in wastewater stream i .

Fe_m =Fraction emitted of organic HAP m in wastewater from Table 9 of

subpart G of this part, dimensionless.

HAP_{Bim} =Average concentration of organic HAP m in wastewater stream i , defined and determined according to paragraph (g)(5)(i) of this section, before the pollution prevention measure, parts per million by weight, as measured before the implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to September 12, 1996 records may be used to determine E_B .

(D) The monthly emissions after the pollution prevention measure, E_{pp} , may

be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater, E_{pp} shall be calculated using Equation 48 of this sub-

part and n , Q_{ppi} , H_{ppi} , s , Fe_m , and HAP_{ppim} are defined and determined as described in paragraph (j)(2)(ii)(B) of this section, except that Q_{ppi} , H_{ppi} , and HAP_{ppim} shall be determined after the pollution prevention measure has been implemented.

$$E_{pp} = \sum_{i=1}^n \left[\left(6.0 \times 10^{-8} \right) Q_{ppi} H_{ppi} \sum_{m=1}^s Fe_m HAP_{ppim} \right] \quad [\text{Eq. 48}]$$

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percent reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percent reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(7) of this section used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percent reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of an affected source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator must demonstrate that the emissions from the emission points proposed to be included in the emissions average will not result in greater hazard or, at the option of the Administrator, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, and 63.1330.

(l) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the Administrator.

(i) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their operating permit application or in their Emissions Averaging Plan if an operating permit application has not yet been submitted.

(3) An Emissions Averaging Plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the Emissions Averaging Plan as are necessary in order to ensure that the emissions average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, and 63.1330.

(4) A hazard or risk equivalency demonstration must:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the Administrator for such demonstrations.

(l) For periods of parameter monitoring excursions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of monitoring excursions in the Periodic Reports as required in § 63.1335(e)(6).

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures of demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the excursion and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

(m) For each emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, and 63.1330, as applicable. The specific requirements for continuous process vents, batch process vents, aggregate batch vent streams, storage vessels, and wastewater operations that are included in an emissions average for an affected source are identified in paragraphs (m)(1) through (m)(7) of this section.

(1) For each continuous process vent subject to § 63.1315 equipped with a flare, incinerator, boiler, or process heater, as appropriate to the control technique:

(i) Determine whether the continuous process vent is Group 1 or Group 2 according to the procedures specified in § 63.1315;

(ii) Conduct initial performance tests to determine percent reduction according to the procedures specified in § 63.1315; and

(iii) Monitor the operating parameters, keep records, and submit reports according to the procedures specified in § 63.1315.

(2) For each continuous process vent subject to § 63.1315 equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device, as appropriate to the control technique:

(i) Determine the flow rate, organic HAP concentration, and TRE index value according to the procedures specified in § 63.1315; and

(ii) Monitor the operating parameters, keep records, and submit reports according to the procedures specified in § 63.1315.

(3) For continuous process vents subject to § 63.1316(b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1):

(i) Determine whether the emissions from the continuous process vents subject to § 63.1316(b)(1)(i) located in the collection of material recovery sections within the affected source are greater than, equal to, or less than 0.12 kg organic HAP per Mg of product according to the procedures specified in § 63.1318(b);

(ii) Determine the emission rate, ER_{HAP} , for each collection of process sections within the affected source according to the procedures specified in § 63.1318(b); and

(iii) [Reserved]

(iv) Monitor the operating parameters, keep records, and submit reports according to the procedures specified in § 63.1317, § 63.1319, § 63.1320.

(4) For each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures according to the procedures specified in § 63.1314;

(ii) Perform the reporting and recordkeeping procedures according to the procedures specified in § 63.1314; and

(iii) For closed vent systems with control devices, conduct an initial design evaluation and submit an operating plan according to the procedures specified in § 63.1314.

(5) For wastewater emission points, as appropriate to the control technique:

(i) For wastewater treatment processes, conduct tests according to the procedures specified in § 63.1330;

(ii) Conduct inspections and monitoring according to the procedures specified in § 63.1330;

(iii) Implement a recordkeeping program according to the procedures specified in § 63.1330; and

(iv) Implement a reporting program according to the procedures specified in § 63.1330.

(6) For each batch process vent and aggregate batch vent stream equipped with a control device, as appropriate to the control technique:

(i) Determine whether the batch process vent or aggregate batch vent stream is Group 1 or Group 2 according to the procedures in § 63.1323;

(ii) Conduct performance tests according to the procedures specified in § 63.1325;

(iii) Conduct monitoring according to the procedures specified in § 63.1324; and

(iv) Perform the recordkeeping and reporting procedures according to the procedures specified in §§ 63.1326 and 63.1327.

(7) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are required by §§ 63.1314, 63.1315, 63.1316 through 63.1320, 63.1321, or 63.1330, the owner or operator shall submit the information specified in § 63.1335(f) for alternate monitoring parameters or inspection procedures in the Emissions Averaging Plan or operating permit application.

(n) Records of all information required to calculate emission debits and credits shall be retained for 5 years.

(o) Precompliance Reports, Emission Averaging Plans, Notifications of Compliance Status, Periodic Reports, and other reports shall be submitted as required by § 63.1335.

§ 63.1333 Additional test methods and procedures.

(a) Performance testing shall be conducted in accordance with § 63.7(a)(3), (d), (e), (g), and (h), with the exceptions specified in paragraphs (a)(1) through (a)(4) of this section and the additions specified in paragraphs (b) through (d) of this section. Sections 63.1314 through 63.1330 also contain specific testing requirements.

(1) Performance tests shall be conducted according to the provisions of § 63.7(e), except that performance tests shall be conducted at maximum representative operating conditions for the process.

(2) References in § 63.7(g) to the Notification of Compliance Status requirements in § 63.7(h) shall refer to the requirements in § 63.1335(e)(5).

(3) Because the site-specific test plans in § 63.7(c)(3) are not required, § 63.7(h)(4)(ii) is not applicable.

(4) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 calendar days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present during the test.

(b) Each owner or operator of an existing affected source producing MBS complying with § 63.1315(b)(2) shall determine compliance with the mass emission per mass product standard by using Equation 49 of this subpart.

$$ER_{MBS} = \frac{\sum_{i=1}^n E_i}{PP_M} \quad [\text{Eq. 49}]$$

where:

ER_{MBS}=Emission rate of organic HAP or TOC from continuous process vents, kg/Mg product.

E_i=Emission rate of organic HAP or TOC from continuous process vent i as calculated using the procedures specified in § 63.116(c)(4), kg/month.

PP_M=Amount of polymer produced in one month as determined by the procedures specified in § 63.1318(b)(1)(ii), Mg/month.

n=Number of continuous process vents.

When determining E_i , when the provisions of § 63.116(c)(4) specify that Method 18, 40 CFR part 60, appendix A, shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A, may be used for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A, shall comply with paragraphs (b)(1) and (b)(2) of this section.

(1) The organic HAP used as the calibration gas for Method 25A, 40 CFR part 60, appendix A, shall be the single organic HAP representing the largest percent by volume.

(2) The use of Method 25A, 40 CFR part 60, appendix A, is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(c) The owner or operator of an affected source, complying with § 63.1322(a)(3) shall determine compliance with the percent reduction requirement using Equation 50 of this subpart.

$$PR = \frac{\left[H_j \sum_{j=1}^n (E_i - E_o) j \right] + \sum_{k=1}^n H_k E_{ku} + \sum_{l=1}^n A E_{unc}}{\left(H_j \sum_{j=1}^n E_i \right) + \sum_{k=1}^n H_k E_{ku} + \sum_{l=1}^n A E_{unc}} \quad (100) \quad [\text{Eq. 50}]$$

where:

PR=Percent reduction

H_j =Number of operating hours in a year for control device j.

E_i =Mass rate of TOC or total organic HAP at the inlet of control device j, calculated as specified in § 63.1325(f), kg/hr. This value includes all continuous process vents, batch process vents, and aggregate batch vent streams routed to control device j.

E_o =Mass rate of TOC or total organic HAP at the outlet of control device j, calculated as specified in § 63.1325(f), kg/hr.

H_k =Number of hours of operation during which positive flow is present in uncontrolled continuous process vent or aggregate batch vent stream k, hr/yr.

E_{ku} =Mass rate of TOC or total organic HAP of uncontrolled continuous process vent or aggregate batch vent stream k, calculated as specified in § 63.1325(f)(4), kg/hr.

$A E_{unc}$ =Mass rate of TOC or total organic HAP of uncontrolled batch process vent l, calculated as specified in § 63.1325(f)(4), kg/yr.

n=Number of control devices, uncontrolled continuous process vents

and aggregate batch vent streams, and uncontrolled batch process vents. The value of n is not necessarily the same for these three items.

(d) Data shall be reduced in accordance with the EPA approved methods specified in the applicable subpart or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

§ 63.1334 Parameter monitoring levels and excursions.

(a) *Establishment of parameter monitoring levels.* The owner or operator of a control or recovery device that has one or more parameter monitoring level requirements specified under this subpart shall establish a maximum or minimum level for each measured parameter using the procedures specified in paragraph (b), (c), or (d) of this section. The procedures specified in paragraph (b) of this section have been approved by the Administrator. The procedures in paragraphs (c) and (d) of this section have not been approved by the Administrator and determination of the parameter monitoring level using the procedures in paragraph (c) or (d) of

this section is subject to review and approval by the Administrator. Said determination and supporting documentation shall be included in the Precompliance Report, specified in § 63.1335(e)(3).

(1) The owner or operator shall operate control and recovery devices such that monitored parameters remain above the minimum established level or below the maximum established level.

(2) As specified in § 63.1335(e)(5) and § 63.1335(e)(8), all established levels, along with their supporting documentation and the definition of an operating day, shall be approved as part of and incorporated into the Notification of Compliance Status or operating permit, respectively.

(3) Nothing in this section shall be construed to allow a monitoring parameter excursion caused by an activity that violates other applicable provisions of subpart A, F, or G of this part.

(b) *Establishment of parameter monitoring levels based on performance tests.* The procedures specified in paragraphs (b)(1) through (b)(3) of this section shall be used, as applicable, in establishing parameter monitoring levels. Level(s) established under this paragraph (b) shall be based on the parameter values measured during the performance test.

(1) *Storage tanks and wastewater.* The maximum and/or minimum monitoring levels shall be based on the parameter values measured during the performance test, supplemented, if desired, by engineering assessments and/or manufacturer's recommendations.

(2) *Continuous process vents.* During initial compliance testing, the appropriate parameter shall be continuously monitored during the required 1-hour runs. The monitoring level(s) shall then be established as the average of the maximum (or minimum) point values from the three test runs. The average of the maximum values shall be used when establishing a maximum level, and the average of the minimum values shall be used when establishing a minimum level.

(3) *Batch process vents.* The monitoring level(s) shall be established using the procedures specified in paragraphs

(b)(3)(i) through (b)(3)(ii) of this section, as appropriate. The procedures specified in this paragraph (b)(3) may only be used if the batch emission episodes, or portions thereof, selected to be controlled were tested, and monitoring data were collected, during the entire period in which emissions were vented to the control device, as specified in § 63.1325(c)(1)(i). If the owner or operator chose to test only a portion of the batch emission episode, or portion thereof, selected to be controlled, as specified in § 63.1325(c)(1)(i)(A), the procedures in paragraph (c) of this section must be used.

(i) If more than one batch emission episode or more than one portion of a batch emission episode has been selected to be controlled, a single level for the batch cycle shall be calculated as follows:

(A) During initial compliance testing, the appropriate parameter shall be monitored continuously at all times when batch emission episodes, or portions thereof, selected to be controlled are vented to the control device.

(B) The average monitored parameter value shall be calculated for each batch emission episode, or portion thereof, in the batch cycle selected to be controlled. The average shall be based on all values measured during the required performance test.

(C) If the level to be established is a maximum operating parameter, the level shall be defined as the minimum of the average parameter values of the batch emission episodes, or portions thereof, in the batch cycle selected to be controlled.

(D) If the level to be established is a minimum operating parameter, the level shall be defined as the maximum of the average parameter values of the batch emission episodes, or portions thereof, in the batch cycle selected to be controlled.

(E) Alternatively, an average monitored parameter value shall be calculated for the entire batch cycle based on all values measured during each batch emission episode, or portion thereof, selected to be controlled.

(ii) Instead of establishing a single level for the batch cycle, as described in paragraph (b)(3)(i) of this section, an

owner or operator may establish separate levels for each batch emission episode, or portion thereof, selected to be controlled. Each level shall be determined as specified in paragraphs (b)(3)(i)(A) and (b)(3)(i)(B) of this section.

(iii) The batch cycle shall be defined in the Notification of Compliance Status, as specified in § 63.1335(e)(5). Said definition shall include an identification of each batch emission episode and the information required to determine parameter monitoring compliance for partial batch cycles (i.e., when part of a batch cycle is accomplished during two different operating days).

(4) *Aggregate batch vent streams.* For aggregate batch vent streams, the monitoring level shall be established in accordance with paragraph (b)(2) of this section.

(c) *Establishment of parameter monitoring levels based on performance tests, engineering assessments, and/or manufacturer's recommendations.* As required in paragraph (a) of this section, the information specified in paragraphs (c)(2) and (c)(3) of this section shall be provided in the Precompliance Report.

(1) Parameter monitoring levels established under this paragraph (c) shall be based on the parameter values measured during the performance test supplemented by engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of expected parameter values.

(2) The specific level of the monitored parameter(s) for each emission point.

(3) The rationale for the specific level for each parameter for each emission point, including any data and calculations used to develop the level and a description of why the level indicates proper operation of the control or recovery device.

(d) *Establishment of parameter monitoring based on engineering assessments and/or manufacturer's recommendations.* If a performance test is not required by this subpart for a control or recovery device, the maximum or minimum level may be based solely on engineering assessments and/or manufacturer's recommendations. As required in paragraph (a) of this section, the deter-

mined level and all supporting documentation shall be provided in the Precompliance Report.

(e) *Compliance determinations.* The provisions of this paragraph (e) apply only to emission points and control or recovery devices for which continuous monitoring is required under this subpart.

(1) The parameter monitoring data for storage vessels, process vents, process wastewater streams, and emission points included in emissions averages that are required to perform continuous monitoring shall be used to determine compliance for the monitored control or recovery devices.

(2) Except as provided in paragraphs (e)(3) and (g) of this section, for each excursion, as defined in paragraph (f) of this section, the owner or operator shall be deemed out of compliance with the provisions of this subpart.

(3) If the daily average value of a monitored parameter is above the maximum level or below the minimum level established, or if monitoring data cannot be collected during monitoring device calibration check or monitoring device malfunction, but the affected source is operated during the periods of start-up, shutdown, or malfunction in accordance with the affected source's Start-up, Shutdown, and Malfunction Plan, then the event shall not be considered a monitoring parameter excursion.

(f) *Parameter monitoring excursion definitions.* (1) For storage vessels, continuous process vents, aggregate batch vent streams, and wastewater streams, an excursion means any of the three cases listed in paragraphs (f)(1)(i) through (f)(1)(iii) of this section. For a control or recovery device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraphs (f)(1)(i) through (f)(1)(iii) of this section, this is considered a single excursion for the control or recovery device.

(i) When the daily average value of one or more monitored parameters is above the maximum level or below the minimum level established for the given parameters.

(ii) When the period of control or recovery device operation is 4 hours or

greater in an operating day and monitoring data are insufficient, as defined in paragraph (f)(1)(iv) of this section, to constitute a valid hour of data for at least 75 percent of the operating hours.

(iii) When the period of control or recovery device operation is less than 4 hours in an operating day and more than two of the hours during the period of operation do not constitute a valid hour of data due to insufficient monitoring data, as defined in paragraph (f)(1)(iv) of this section.

(iv) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (f)(1)(ii) and (f)(1)(iii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under § 63.1335(g)(3), monitoring data are insufficient to calculate a valid hour of data if there are less than four data measurements made during the hour.

(2) For batch process vents, an excursion means one of the two cases listed in paragraphs (f)(2)(i) and (f)(2)(ii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in either paragraph (f)(2)(i) or (f)(2)(ii) of this section, this is considered a single excursion for the control device.

(i) When the batch cycle daily average value of one or more monitored parameters is above the maximum or below the minimum established level for the given parameters.

(ii) When monitoring data are insufficient. Monitoring data shall be considered insufficient when measured values are not available for at least 75 percent of the 15-minute periods when batch emission episodes, or portions thereof, selected to be controlled are being vented to the control device during the operating day.

(g) *Excused excursions.* A number of excused excursions shall be allowed for each control or recovery device for each semiannual period. The number of excused excursions for each semiannual period is specified in paragraphs (g)(1) through (g)(6) of this section. This paragraph (g) applies to affected sources required to submit Periodic Reports semiannually or quarterly. The

first semiannual period is the 6-month period starting the date the Notification of Compliance Status is due.

(1) For the first semiannual period—six excused excursions.

(2) For the second semiannual period—five excused excursions.

(3) For the third semiannual period—four excused excursions.

(4) For the fourth semiannual period—three excused excursions.

(5) For the fifth semiannual period—two excused excursions.

(6) For the sixth and all subsequent semiannual periods—one excused excursion.

§ 63.1335 General recordkeeping and reporting provisions.

(a) *Data retention.* Each owner or operator of an affected source shall keep copies of all applicable records and reports required by this subpart for at least 5 years, unless otherwise specified in this subpart.

(b) *Requirements of subpart A of this part.* The owner or operator of an affected source shall comply with the applicable recordkeeping and reporting requirements in subpart A of this part as specified in Table 1 of this subpart. These requirements include, but are not limited to, the requirements specified in paragraphs (b)(1) and (b)(2) of this section.

(1) *Start-up, shutdown, and malfunction plan.* The owner or operator of an affected source shall develop and implement a written start-up, shutdown, and malfunction plan as specified in § 63.6(e)(3). This plan shall describe, in detail, procedures for operating and maintaining the affected source during periods of start-up, shutdown, and malfunction and a program for corrective action for malfunctioning process and air pollution control equipment used to comply with this subpart. The affected source shall keep this plan onsite and shall incorporate it by reference into their operating permit. Records associated with the plan shall be kept as specified in paragraphs (b)(1)(i)(A) through (b)(1)(i)(D) of this section. Reports related to the plan shall be submitted as specified in paragraph (b)(1)(ii) of this section.

(i) *Records of start-up, shutdown, and malfunction.* The owner or operator

shall keep the records specified in paragraphs (b)(1)(i)(A) through (b)(1)(i)(D) of this section.

(A) Records of the occurrence and duration of each malfunction of air pollution control equipment or continuous monitoring systems used to comply with this subpart.

(B) For each start-up, shutdown, or malfunction, a statement that the procedures specified in the affected source's start-up, shutdown, and malfunction plan were followed; alternatively, documentation of any actions taken that are not consistent with the plan.

(C) For continuous monitoring systems used to comply with this subpart, records documenting the completion of calibration checks and maintenance of continuous monitoring systems that are specified in the manufacturer's instructions.

(D) Records specified in paragraphs (b)(1)(i)(B) and (b)(1)(i)(C) of this section are not required if they pertain solely to Group 2 emission points that are not included in an emissions average or to Group 2 continuous process vents subject to § 63.1315(a) with a total resource effectiveness value greater than 4.0 or, for Group 2 continuous process vents subject to § 63.1315(b), with a total resource effectiveness value greater than 6.7.

(i) *Reports of start-up, shutdown, and malfunction.* For the purposes of this subpart, the semiannual start-up, shutdown, and malfunction reports shall be submitted on the same schedule as the Periodic Reports required under paragraph (e)(6) of this section instead of the schedule specified in § 63.10(d)(5)(i). Said reports shall include the information specified in paragraphs (b)(1)(i)(A) through (b)(1)(i)(C) of this section and shall contain the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy.

(2) *Application for approval of construction or reconstruction.* For new affected sources, each owner or operator shall comply with the provisions in § 63.5 regarding construction and reconstruction, excluding the provisions specified in § 63.5 (d)(1)(ii)(H), (d)(2), and (d)(3)(ii).

(c) *Requirements of subpart H of this part.* Owners or operators of affected sources shall comply with the reporting and recordkeeping requirements in subpart H of this part, except as specified in § 63.1331.

(d) *Recordkeeping and documentation.* Owners or operators required to keep continuous records shall keep records as specified in paragraphs (d)(1) through (d)(8) of this section, unless an alternative recordkeeping system has been requested and approved as specified in paragraph (g) or (h) of this section. Documentation requirements are specified in paragraphs (d)(9) and (d)(10) of this section.

(1) The monitoring system shall measure data values at least once every 15 minutes.

(2) The owner or operator shall record either each measured data value or block average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values. Owners or operators of batch process vents must record each measured data value.

(3) Daily average (or batch cycle daily average) values of each continuously monitored parameter shall be calculated for each operating day as specified in paragraphs (d)(3)(i) through (d)(3)(ii) of this section, except as specified in paragraph (d)(6) of this section.

(i) The daily average value or batch cycle daily average shall be calculated as the average of all parameter values recorded during the operating day. As specified in § 63.1326(e)(2)(i), only parameter values measured during those batch emission episodes, or portions thereof, in the batch cycle that the owner or operator has chosen to control shall be used to calculate the average. The calculated average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.

(ii) The operating day shall be the period the owner or operator specifies in the operating permit or the Notification of Compliance Status. It may be

from midnight to midnight or another 24-hour period.

(4) *Records required when out of compliance.* If the daily average (or batch cycle daily average) value of a monitored parameter for a given operating day is below the minimum level or above the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator shall retain the data recorded that operating day under paragraph (d)(2) of this section.

(5) *Records required when in compliance for daily average value or batch cycle daily average value.* If the daily average (or batch cycle daily average) value of a monitored parameter for a given operating day is above the minimum level or below the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator shall either:

(i) Retain block average values for 1 hour or shorter periods for that operating day; or

(ii) Retain the data recorded in paragraph (d)(2) of this section.

(6) *Records required when all recorded values are in compliance.* If all recorded values for a monitored parameter during an operating day are above the minimum level or below the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were above the minimum level or below the maximum level rather than calculating and recording a daily average (or batch cycle daily average) for that operating day. For these operating days, the records required in paragraph (d)(5) of this section shall also be retained for 5 years.

(7) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods.

(8) In addition to the periods specified in paragraph (d)(7) of this section, records shall be kept of the times and durations of any other periods during process operation or control device operation when monitors are not operating. For batch process vents, this para-

graph (d)(8) only applies during batch emission episodes, or portions thereof, that the owner or operator has selected to control.

(9) For each TPPU that is not part of the affected source because it does not use as a reactant or process solvent, or produce as a by-product or co-product any organic HAP, the owner or operator shall maintain the documentation specified in § 63.1310(b)(1).

(10) For each flexible operation unit in which the primary product is determined to be something other than a thermoplastic product, the owner or operator shall maintain the documentation specified in § 63.1310(f)(6).

(e) *Reporting and notification.* (1) In addition to the reports and notifications required by subparts A and H of this part, as specified in this subpart, the owner or operator of an affected source shall prepare and submit the reports listed in paragraphs (e)(3) through (e)(8) of this section, as applicable.

(2) All reports required under this subpart shall be sent to the Administrator at the addresses listed in § 63.13. If acceptable to both the Administrator and the owner or operator of an affected source, reports may be submitted on electronic media.

(3) *Precompliance Report.* Affected sources requesting an extension for compliance, or requesting approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping, or alternative controls, shall submit a Precompliance Report according to the schedule described in paragraph (e)(3)(i) of this section. The Precompliance Report shall contain the information specified in paragraphs (e)(3)(ii) through (e)(3)(vi) of this section, as appropriate.

(i) *Submittal dates.* The Precompliance Report shall be submitted to the Administrator no later than 12 months prior to the compliance date. For new affected sources, the Precompliance Report shall be submitted to the Administrator with the application for approval of construction or reconstruction required in paragraph (b)(2) of this section.

(ii) A request for an extension for compliance must be submitted in the Precompliance Report, if it has not

been submitted to the operating permit authority as part of the operating permit application. The request for a compliance extension will include the data outlined in § 63.6(i)(6)(i) (A), (B), and (D), as required in § 63.1311(e)(1).

(iii) The alternative monitoring parameter information required in paragraph (f) of this section shall be submitted if, for any emission point, the owner or operator of an affected source seeks to comply through the use of a control technique other than those for which monitoring parameters are specified in this subpart or in subpart G of this part or seeks to comply by monitoring a different parameter than those specified in this subpart or in subpart G of this part.

(iv) If the affected source seeks to comply using alternative continuous monitoring and recordkeeping as specified in paragraph (g) of this section, the information requested in paragraph (e)(3)(iv)(A) or (e)(3)(iv)(B) of this section must be submitted in the Precompliance Report.

(A) The owner or operator must submit notification of the intent to use the provisions specified in paragraph (g) of this section; or

(B) The owner or operator must submit a request for approval to use alternative continuous monitoring and recordkeeping provisions as specified in paragraph (g) of this section.

(v) The owner or operator shall report the intent to use alternative controls to comply with the provisions of this subpart. Alternative controls must be deemed by the Administrator to be equivalent to the controls required by the standard, under the procedures outlined in § 63.6(g).

(vi) If an owner or operator demonstrates that the emissions estimation equations contained in § 63.1323(b) are inappropriate as specified in § 63.1323(b)(6)(ii)(B), the information required by § 63.1323(b)(6)(ii)(D) shall be submitted.

(vii) If an owner or operator establishes parameter monitoring levels according to the procedures contained in § 63.1334 (c) or (d), the information specified by § 63.1334 (c) or (d), as appropriate.

(4) *Emissions Averaging Plan.* For all existing affected sources using emis-

sions averaging, an Emissions Averaging Plan shall be submitted for approval according to the schedule and procedures described in paragraph (e)(4)(i) of this section. The Emissions Averaging Plan shall contain the information specified in paragraph (e)(4)(ii) of this section, unless the information required in paragraph (e)(4)(ii) of this section is submitted with an operating permit application. An owner or operator of an affected source who submits an operating permit application instead of an Emissions Averaging Plan shall submit the information specified in paragraph (e)(8) of this section. In addition, a supplement to the Emissions Averaging Plan, as required under paragraph (e)(4)(iii) of this section, is to be submitted whenever alternative controls or operating scenarios may be used to comply with this subpart. Updates to the Emissions Averaging Plan shall be submitted in accordance with paragraph (e)(4)(iv) of this section.

(i) *Submittal and approval.* The Emissions Averaging Plan shall be submitted no later than 18 months prior to the compliance date, and it is subject to Administrator approval. The Administrator shall determine within 120 operating days whether the Emissions Averaging Plan submitted presents sufficient information. The Administrator shall either approve the Emissions Averaging Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 operating days.

(ii) *Information required.* The Emissions Averaging Plan shall contain the information listed in paragraphs (e)(4)(ii)(A) through (e)(4)(ii)(K) of this section for all emission points included in an emissions average.

(A) The required information shall include the identification of all emission points in the planned emissions average and, where applicable, notation of whether each storage vessel, continuous process vent, batch process vent, aggregate batch vent stream, and process wastewater stream is a Group 1 or Group 2 emission point, as defined in

§63.1312 or as designated under §63.1332 (c)(3) through (c)(5).

(B) The required information shall include the projected emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to §63.1332. The projected credits must be greater than or equal to the projected debits, as required under §63.1332(e)(3).

(C) The required information shall include the specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(D) The required information shall include the specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in §63.1332(j)(1) must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(E) The required information shall include a statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in §63.1332 (m), (n), and (o) that are applicable to each emission point in the emissions average will be implemented beginning on or before the date of compliance.

(F) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(F)(1) through (e)(4)(ii)(F)(5) of this section for each storage vessel and continuous process vent subject to §63.1315 included in the average.

(1) The required documentation shall include the values of the parameters used to determine whether the emission point is Group 1 or Group 2. Where TRE index value is used for continuous process vent group determination, the estimated or measured values of the parameters used in the TRE equation in §63.115(d) and the resulting TRE index value shall be submitted.

(2) The required documentation shall include the estimated values of all parameters needed for input to the emission debit and credit calculations in

§63.1332 (g) and (h). These parameter values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv) of this section.

(3) The required documentation shall include the estimated percent reduction if a control technology achieving a lower percent reduction than the efficiency of the applicable reference control technology or standard is or will be applied to the emission point.

(4) The required documentation shall include the anticipated nominal efficiency if a control technology achieving a greater percent emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in §63.1332(i) shall be followed to apply for a nominal efficiency.

(5) The required documentation shall include the operating plan required by §63.1314, as specified in §63.122 (a)(2) and (b) for each storage vessel controlled with a closed-vent system with a control device other than a flare.

(G) The information specified in paragraph (f) of this section shall be included in the Emissions Averaging Plan for:

(1) Each continuous process vent subject to §63.1315 controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in §63.114; and

(2) Each storage vessel controlled by pollution prevention or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(H) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(H)(1) through (e)(4)(ii)(H)(5) of this section for each collection of continuous process vents located in a process section within the affected source subject to §63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) included in the average.

(1) For continuous process vents subject to §63.1316(b)(1)(i), the required documentation shall include the values of the parameters used to determine whether the emission point is Group 1 or Group 2. Continuous process vents

subject to § 63.1316 (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) are considered Group 1 emission points for purposes of emissions averaging, as specified in § 63.1332(c)(5).

(2) The required documentation shall include the estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.1332 (g) and (h). These parameter values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv) of this section.

(3) For process sections generating debits or credits by comparing actual emissions expressed as kg HAP emissions per Mg of product to the applicable standard, the required documentation shall include the actual emission level expressed as kg HAP emissions per Mg of product.

(4) For process sections using combustion control devices, the required documentation shall include the estimated percent reduction if a control technology achieving a lower percent reduction than the efficiency of the applicable reference control technology or standard is or will be applied to the emission point.

(5) For process sections using combustion control devices, the required documentation shall include the anticipated nominal efficiency if a control technology achieving a greater percent emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in § 63.1332(i) shall be followed to apply for a nominal efficiency.

(I) For each pollution prevention measure or control device used to reduce air emissions of organic HAP from each collection of continuous process vents located in a process section within the affected source subject to § 63.1316 (b)(1)(i), (b)(1)(ii), (b)(2)(i), (b)(2)(ii), or (c)(1) and for which no monitoring parameters or inspection procedures are specified in § 63.114, the information specified in paragraph (f) of this section, Alternative Monitoring Parameters, shall be included in the Emissions Averaging Plan.

(J) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(J)(1) through (e)(4)(ii)(J)(3) of this section for each batch process vent and aggregate batch vent stream included in the average.

(1) The required documentation shall include the values of the parameters used to determine whether the emission point is Group 1 or Group 2.

(2) The required documentation shall include the estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.1332 (g) and (h). These parameter values shall be specified in the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv) of this section.

(3) For batch process vents, the required documentation shall include the estimated percent reduction for the batch cycle. For aggregate batch vent streams, the required documentation shall include the estimated percent reduction achieved on a continuous basis.

(K) For each pollution prevention measure or control device used to reduce air emissions of organic HAP from batch process vents or aggregate batch vent streams and for which no monitoring parameters or inspection procedures are specified in § 63.1324, the information specified in paragraph (f) of this section, Alternative Monitoring Parameters, shall be included in the Emissions Averaging Plan.

(L) The required information shall include documentation of the data listed in paragraphs (e)(4)(ii)(L)(1) through (e)(4)(ii)(L)(4) of this section for each process wastewater stream included in the average.

(1) The required documentation shall include the data used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream and the information specified in Table 14b of subpart G of this part for wastewater streams at new and existing affected sources.

(2) The required documentation shall include the estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in § 63.1332 (g) and (h). These parameter values shall be specified in

the affected source's Emissions Averaging Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (e)(4)(iv) of this section.

(3) The required documentation shall include the estimated percent reduction if:

(i) A control technology that achieves an emission reduction less than or equal to the emission reduction that would otherwise have been achieved by a steam stripper designed to the specifications found in §63.138(g) is or will be applied to the wastewater stream;

(ii) A control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes; or

(iii) A pollution prevention measure is or will be applied.

(4) The required documentation shall include the anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under §63.1332(i). A nominal efficiency shall be applied for if:

(i) A control technology that achieves an emission reduction greater than the emission reduction that would have been achieved by a steam stripper designed to the specifications found in §63.138(g), is or will be applied to the wastewater stream; or

(ii) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(M) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP from wastewater and for which no monitoring parameters or inspection procedures are specified in §63.143, the information specified in paragraph (f) of this section, Alternative Monitoring Parameters, shall be included in the Emissions Averaging Plan.

(N) The required information shall include documentation of the data required by §63.1332(k). The documentation must demonstrate that the emissions from the emission points proposed to be included in the average will

not result in greater hazard or, at the option of the Administrator, greater risk to human health or the environment than if the emission points were not included in an emissions average.

(iii) *Supplement to Emissions Averaging Plan.* The owner or operator required to prepare an Emissions Averaging Plan under paragraph (e)(4) of this section shall also prepare a supplement to the Emissions Averaging Plan for any alternative controls or operating scenarios that may be used to achieve compliance.

(iv) *Updates to Emissions Averaging Plan.* The owner or operator of an affected source required to submit an Emissions Averaging Plan under paragraph (e)(4) of this section shall also submit written updates of the Emissions Averaging Plan to the Administrator for approval under the circumstances described in paragraphs (e)(4)(iv)(A) and (e)(4)(iv)(B) of this section unless the relevant information has been included and submitted in an operating permit application or amendment.

(A) The owner or operator who plans to make a change listed in either paragraph (e)(4)(iv)(A)(1) or (e)(4)(iv)(A)(2) of this section shall submit an Emissions Averaging Plan update at least 120 operating days prior to making the change.

(1) An Emissions Averaging Plan update shall be submitted whenever an owner or operator elects to achieve compliance with the emissions averaging provisions in §63.1332 by using a control technique other than that specified in the Emissions Averaging Plan or plans to monitor a different parameter or operate a control device in a manner other than that specified in the Emissions Averaging Plan.

(2) An Emissions Averaging Plan update shall be submitted whenever an emission point or a TPPU is added to an existing affected source and is planned to be included in an emissions average, or whenever an emission point not included in the emissions average described in the Emissions Averaging Plan is to be added to an emissions average. The information in paragraph (e)(4) of this section shall be updated to include the additional emission point.

(B) The owner or operator who has made a change as defined in paragraph (e)(4)(iv)(B)(1) or (e)(4)(iv)(B)(2) of this section shall submit an Emissions Averaging Plan update within 90 operating days after the information regarding the change is known to the affected source. The update may be submitted in the next quarterly periodic report if the change is made after the date the Notification of Compliance Status is due.

(1) An Emissions Averaging Plan update shall be submitted whenever a process change is made such that the group status of any emission point in an emissions average changes.

(2) An Emissions Averaging Plan update shall be submitted whenever a value of a parameter in the emission credit or debit equations in § 63.1332 (g) or (h) changes such that it is below the minimum or above the maximum established level specified in the Emissions Averaging Plan and causes a decrease in the projected credits or an increase in the projected debits.

(C) The Administrator shall approve or request changes to the Emissions Averaging Plan update within 120 operating days of receipt of sufficient information regarding the change for emission points included in emissions averages.

(5) *Notification of Compliance Status.* For existing and new affected sources, a Notification of Compliance Status shall be submitted within 150 operating days after the compliance dates specified in § 63.1311. The notification shall contain the information listed in paragraphs (e)(5)(i) through (e)(5)(viii) of this section.

(i) The results of any emission point group determinations, process section applicability determinations, performance tests, inspections, continuous monitoring system performance evaluations, any other information used to demonstrate compliance, and any other information required to be included in the Notification of Compliance Status under § 63.122 for storage vessels, § 63.117 for continuous process vents, § 63.146 for process wastewater, § 63.1316 through § 63.1320 for continuous process vents subject to § 63.1316, § 63.1327 for batch process vents, § 63.1329 for process contact cooling towers, and § 63.1332 for

emission points included in an emissions average. In addition, each owner or operator shall comply with paragraph (e)(5)(i)(A) and (e)(5)(i)(B) of this section.

(A) For performance tests, group determinations, and process section applicability determinations that are based on measurements, the Notification of Compliance Status shall include one complete test report, as described in paragraph (e)(5)(i)(B) of this section, for each test method used for a particular kind of emission point. For additional tests performed for the same kind of emission point using the same method, the results and any other required information shall be submitted, but a complete test report is not required.

(B) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(ii) For each monitored parameter for which a maximum or minimum level is required to be established under § 63.120(d)(3) for storage vessels, § 63.114(e) for continuous process vents, § 63.1324 for batch process vents and aggregate batch vent streams, § 63.143(f) for process wastewater, § 63.1332(m) for emission points in emissions averages, paragraph (e)(8) or (f) of this section, the Notification of Compliance Status shall contain the information specified in paragraphs (e)(5)(ii)(A) through (e)(5)(ii)(D) of this section, unless this information has been established and provided in the operating permit.

(A) The required information shall include the specific maximum or minimum level of the monitored parameter(s) for each emission point.

(B) The required information shall include the rationale for the specific maximum or minimum level for each parameter for each emission point, including any data and calculations used

to develop the level and a description of why the level indicates proper operation of the control device.

(C) The required information shall include a definition of the affected source's operating day, as specified in paragraph (d)(3)(ii) of this section, for purposes of determining daily average values or batch cycle daily average values of monitored parameters.

(D) For batch process vents, the required information shall include a definition of each batch cycle that requires the control of one or more batch emission episodes during the cycle, as specified in § 63.1325(c)(2) and § 63.1334(b)(3)(iii).

(iii) For emission points included in an emissions average, the Notification of Compliance Status shall contain the values of all parameters needed for input to the emission credit and debit equations in § 63.1332 (g) and (h), calculated or measured according to the procedures in § 63.1332 (g) and (h), and the resulting calculation of credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified.

(iv) The determination of applicability for flexible operation units as specified in § 63.1310(f)(6).

(v) The parameter monitoring levels for flexible operation units, and the basis on which these levels were selected, or a demonstration that these levels are appropriate at all times, as specified in § 63.1310(f)(7).

(vi) The results for each predominant use determination for storage vessels belonging to an affected source subject to this subpart that is made under § 63.1310(g)(6).

(vii) The results for each predominant use determination for recovery operation equipment belonging to an affected source subject to this subpart that is made under § 63.1310(h)(6).

(viii) For owners or operators of Group 2 batch process vents establishing a batch cycle limitation as specified in § 63.1325(g), the affected source's operating year for purposes of determining compliance with the batch cycle limitation.

(6) *Periodic Reports.* For existing and new affected sources, each owner or operator shall submit Periodic Reports as

specified in paragraphs (e)(6)(i) through (e)(6)(xi) of this section.

(i) Except as specified in paragraphs (e)(6)(x) and (e)(6)(xi) of this section, a report containing the information in paragraph (e)(6)(ii) of this section or containing the information in paragraphs (e)(6)(iii) through (e)(6)(ix) of this section, as appropriate, shall be submitted semiannually no later than 60 operating days after the end of each 180 day period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due. Subsequent reports shall cover each preceding 6-month period.

(ii) If none of the compliance exceptions specified in paragraphs (e)(6)(iii) through (e)(6)(ix) of this section occurred during the 6-month period, the Periodic Report required by paragraph (e)(6)(i) of this section shall be a statement that the affected source was in compliance for the preceding 6-month period and no activities specified in paragraphs (e)(6)(iii) through (e)(6)(ix) of this section occurred during the preceding 6-month period.

(iii) For an owner or operator of an affected source complying with the provisions of §§ 63.1314 through 63.1330 for any emission point or process section, Periodic Reports shall include:

(A) All information specified in § 63.122 for storage vessels; §§ 63.117 and 63.118 and § 63.1320 for continuous process vents, as applicable; § 63.1327 for batch process vents and aggregate batch vent streams; § 63.104 for heat exchange systems; and § 63.146 for process wastewater;

(B) The daily average values or batch cycle daily average values of monitored parameters for both excused excursions, as defined in § 63.1334(g), and unexcused excursions, as defined in § 63.1334(f). For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified;

(C) The periods when monitoring data were not collected shall be specified;

(D) The information in paragraphs (e)(6)(iii)(D)(i) through (e)(6)(iii)(D)(3) of this section, as applicable;

(1) Any supplements to the Emissions Averaging Plan, as required in paragraph (e)(4)(iii) of this section;

(2) Notification if a process change is made such that the group status of any emission point changes. The information submitted shall include a compliance schedule, as specified in paragraphs (e)(6)(iii)(D)(2)(i) and (e)(6)(iii)(D)(2)(ii) of this section, for emission points that are added or that change from Group 2 to Group 1 as specified in § 63.1310(i)(2)(ii); for continuous process vents under the conditions listed in § 63.1315(a)(12) or § 63.1320(b)(3), as applicable; or for batch process vents under the conditions listed in § 63.1327(b) or § 63.1327(d). This information may be submitted in a separate report, as specified in § 63.1315(a)(12), § 63.1320(b)(3), § 63.1327(b), or § 63.1327(d); and

(i) The owner or operator shall submit to the Administrator for approval a compliance schedule and a justification for the schedule.

(ii) The Administrator shall approve the compliance schedule or request changes within 120 operating days of receipt of the compliance schedule and justification.

(3) Notification if one or more emission point(s) or one or more TPPU is added to an affected source. The owner or operator shall submit the information contained in paragraphs (e)(6)(iii)(D)(3)(i) through (e)(6)(iii)(D)(3)(iii) of this section:

(i) A description of the addition to the affected source;

(ii) Notification of the group status of the additional emission point or all emission points in the TPPU; and

(iii) A compliance schedule, as required under paragraph (e)(6)(iii)(D)(2) of this section.

(E) The information in paragraph (b)(1)(ii) of this section for reports of start-up, shutdown, and malfunction.

(iv) For each batch process vent with a batch cycle limitation, every second Periodic Report shall include the type and number of batch cycles accomplished during the preceding 12-month period and a statement that the batch process vent is either in or out of compliance with the batch cycle limitation.

(v) If any performance tests are reported in a Periodic Report, the following information shall be included:

(A) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (e)(5)(i)(B) of this section.

(B) For additional tests performed for the same kind of emission point using the same method, results and any other information required shall be submitted, but a complete test report is not required.

(vi) The Periodic Report shall include the results for each change made to a primary product determination for a thermoplastic product made under § 63.1310(f)(6).

(vii) The Periodic Report shall include the results for each change made to a predominant use determination for a storage vessel belonging to an affected source subject to this subpart that is made under § 63.1310(g)(6).

(viii) The Periodic Report shall include the results for each change made to a predominant use determination for recovery operation equipment belonging to an affected source subject to this subpart that is made under § 63.1310(h)(6).

(ix) The Periodic Report required by § 63.1331(a)(5) may be submitted as part of the Periodic Report required by paragraph (e)(6) of this section.

(x) The owner or operator of an affected source shall submit quarterly reports for all emission points included in an emissions average.

(A) The quarterly reports shall be submitted no later than 60 operating days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status no later than 150 days after the compliance date.

(B) The quarterly reports shall include the information specified in paragraphs (e)(6)(x)(B)(1) through (e)(6)(x)(B)(7) of this section for all emission points included in an emissions average.

(1) The credits and debits calculated each month during the quarter;

(2) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated

for the quarter, as required under § 63.1332(e)(4);

(3) The values of any inputs to the debit and credit equations in § 63.1332(g) and (h) that change from month to month during the quarter or that have changed since the previous quarter;

(4) Results of any performance tests conducted during the reporting period including one complete report for each test method used for a particular kind of emission point as described in paragraph (e)(6)(v) of this section;

(5) Reports of daily average (or batch cycle daily average) values of monitored parameters for excursions as defined in § 63.1334(f);

(6) For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified; and

(7) Any other information the affected source is required to report under the operating permit or Emissions Averaging Plan for the affected source.

(C) § 63.1334 shall govern the use of monitoring data to determine compliance for Group 1 and Group 2 emission points included in emissions averages.

(D) Every fourth quarterly report shall include the following:

(1) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.1332(e)(3); and

(2) A certification of compliance with all the emissions averaging provisions in § 63.1332.

(xi) The owner or operator of an affected source shall submit quarterly reports for particular emission points and process sections not included in an emissions average as specified in paragraphs (e)(6)(xi)(A) through (e)(6)(xi)(E) of this section.

(A) If requested by the Administrator, the owner or operator of an affected source shall submit quarterly reports for a period of 1 year for an emission point or process section that is not included in an emissions average if either condition in paragraph (e)(6)(xi)(A)(1) or (e)(6)(xi)(A)(2) of this section is met.

(1) An emission point has any excursions, as defined in § 63.1334(f), for a semiannual reporting period.

(2) A process section subject to § 63.1316 is out of compliance with its applicable standard.

(B) The quarterly reports shall include all information specified in paragraphs (e)(6)(iii) through (e)(6)(ix) of this section applicable to the emission point or process section for which quarterly reporting is required under paragraph (e)(6)(xi)(A) of this section. Information applicable to other emission points within the affected source shall be submitted in the semiannual reports required under paragraph (e)(6)(i) of this section.

(C) Quarterly reports shall be submitted no later than 60 operating days after the end of each quarter.

(D) After quarterly reports have been submitted for an emission point for 1 year, the owner or operator may return to semiannual reporting for the emission point or process section unless the Administrator requests the owner or operator to continue to submit quarterly reports.

(E) § 63.1334 shall govern the use of monitoring data to determine compliance for Group 1 emission points.

(7) *Other reports.* Other reports shall be submitted as specified in paragraphs (e)(7)(i) through (e)(7)(ii) of this section.

(i) For storage vessels, the notifications of inspections required by § 63.1314 shall be submitted as specified in § 63.122 (h)(1) and (h)(2).

(ii) For owners or operators of affected sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.1332(i) shall be submitted.

(8) *Operating permit.* An owner or operator who submits an operating permit application instead of an Emissions Averaging Plan or a Precompliance Report shall submit the following information with the operating permit application:

(i) The information specified in paragraph (e)(4) of this section for points included in an emissions average;

(ii) The information specified in paragraph (e)(5) of this section, Notification of Compliance Status, as applicable; and

(iii) The information specified in paragraph (e)(3) of this section, Precompliance Report, as applicable.

(f) *Alternative monitoring parameters.* The owner or operator who has been directed by any section of this subpart to set unique monitoring parameters, or who requests approval to monitor a different parameter than those specified in § 63.1314 for storage vessels, § 63.1315 or 63.1317, as appropriate, for continuous process vents, § 63.1321 for batch process vents and aggregate batch vent streams, or § 63.1330 for wastewater shall submit the information specified in paragraphs (f)(1) through (f)(3) of this section in the Precompliance Report, as required by paragraph (e)(3) of this section. The owner or operator shall retain for a period of 5 years each record required by paragraphs (f)(1) through (f)(3) of this section.

(1) The required information shall include a description of the parameter(s) to be monitored to ensure the recovery device, control device, or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).

(2) The required information shall include a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation, the schedule for this demonstration, and a statement that the owner or operator will establish a level for the monitored parameter as part of the Notification of Compliance Status report required in paragraph (e)(5) of this section, unless this information has already been included in the operating permit application.

(3) The required information shall include a description of the proposed monitoring, recordkeeping, and reporting system, to include the frequency and content of monitoring, recordkeeping, and reporting. Further, the rationale for the proposed monitoring, recordkeeping, and reporting system shall be included if either condition in paragraph (f)(3)(i) or (f)(3)(ii) of this section is met:

(i) If monitoring and recordkeeping is not continuous; or

(ii) If reports of daily average values will not be included in Periodic Reports when the monitored parameter value is above the maximum level or below the minimum level as established in the operating permit or the Notification of Compliance Status.

(g) *Alternative continuous monitoring and recordkeeping.* An owner or operator choosing not to implement the provisions listed in § 63.1315 or 63.1317, as appropriate, for continuous process vents, § 63.1321 for batch process vents and aggregate batch vent streams, § 63.1314 for storage vessels, or § 63.1330 for wastewater, may instead request approval to use alternative continuous monitoring and recordkeeping provisions according to the procedures specified in paragraphs (g)(1) through (g)(4) of this section. Requests shall be submitted in the Precompliance Report as specified in paragraph (e)(3) of this section, if not already included in the operating permit application, and shall contain the information specified in paragraphs (g)(2)(ii) and (g)(3)(ii) of this section, as applicable.

(1) The provisions in § 63.8(f)(5)(i) shall govern the review and approval of requests.

(2) An owner or operator of an affected source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and that does not generate continuous records may request approval to use a nonautomated system with less frequent monitoring, in accordance with paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(i) The requested system shall include manual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily average (or batch cycle daily average) values shall be calculated from these hourly values and recorded.

(ii) The request shall contain:

(A) A description of the planned monitoring and recordkeeping system;

(B) Documentation that the affected source does not have an automated monitoring and recording system;

(C) Justification for requesting an alternative monitoring and recordkeeping system; and

(D) Demonstration to the Administrator's satisfaction that the proposed monitoring frequency is sufficient to represent control or recovery device operating conditions, considering typical variability of the specific process and control or recovery device operating parameter being monitored.

(3) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example, once every 15 minutes) but records all values that meet set criteria for variation from previously recorded values, in accordance with paragraphs (g)(3)(i) and (g)(3)(ii) of this section.

(i) The requested system shall be designed to:

(A) Measure the operating parameter value at least once every 15 minutes;

(B) Except for the monitoring of batch process vents, calculate hourly average values each hour during periods of operation;

(C) Record the date and time when monitors are turned off or on;

(D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident;

(E) Calculate daily average (or batch cycle daily average) values of the monitored operating parameter based on all measured data; and

(F) If the daily average is not an excursion, as defined in §63.1334(f), the data for that operating day may be converted to hourly average values and the four or more individual records for each hour in the operating day may be discarded.

(ii) The request shall contain:

(A) A description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained;

(B) The method for calculating daily averages and batch cycle daily averages; and

(C) A demonstration that the system meets all criteria in paragraph (g)(3)(i) of this section.

(4) An owner or operator may request approval to use other alternative mon-

itoring systems according to the procedures specified in §63.8(f).

(h) *Reduced recordkeeping program.* For any parameter with respect to any item of equipment, the owner or operator may implement the recordkeeping requirements specified in paragraph (h)(1) or (h)(2) of this section as alternatives to the provisions specified in §63.1314 for storage vessels, §63.1315 or 63.1317, as appropriate, for continuous process vents, §63.1321 for batch process vents and aggregate batch vent streams, or §63.1330 for wastewater. The owner or operator shall retain for a period of 5 years each record required by paragraph (h)(1) or (h)(2) of this section.

(1) The owner or operator may retain only the daily average (or batch cycle daily average) value, and is not required to retain more frequent monitored operating parameter values, for a monitored parameter with respect to an item of equipment, if the requirements of paragraphs (h)(1)(i) through (h)(1)(vi) of this section are met. An owner or operator electing to comply with the requirements of paragraph (h)(1) of this section shall notify the Administrator in the Notification of Compliance Status or, if the Notification of Compliance Status has already been submitted, in the Periodic Report immediately preceding implementation of the requirements of paragraph (h)(1) of this section.

(i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation other than start-ups, shutdowns, or malfunctions (e.g., a temperature reading of -200°C on a boiler), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this running average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in

paragraphs (h)(1)(ii)(A) through (h)(1)(ii)(C) of this section. All instances in an operating day constitute a single occurrence.

(A) The running average is above the maximum or below the minimum established limits;

(B) The running average is based on at least six 1-hour periods; and

(C) The running average reflects a period of operation other than a start-up, shutdown, or malfunction.

(iii) The monitoring system is capable of detecting unchanging data during periods of operation other than start-ups, shutdowns, or malfunctions, except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.

(iv) The monitoring system will alert the owner or operator by an alarm, if the running average parameter value calculated under paragraph (h)(1)(ii) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.

(v) The owner or operator shall verify the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (h)(1) of this section, at the times specified in paragraphs (h)(1)(v)(A) through (h)(1)(v)(C). The owner or operator shall document that the required verifications occurred.

(A) Upon initial installation.

(B) Annually after initial installation.

(C) After any change to the programming or equipment constituting the monitoring system, which might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.

(vi) The owner or operator shall retain the records identified in paragraphs (h)(1)(vi)(A) through (h)(1)(vi)(C) of this section.

(A) Identification of each parameter, for each item of equipment, for which the owner or operator has elected to

comply with the requirements of paragraph (h) of this section.

(B) A description of the applicable monitoring system(s), and of how compliance will be achieved with each requirement of paragraphs (h)(1)(i) through (h)(1)(v) of this section. The description shall identify the location and format (e.g., on-line storage, log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent superseded description.

(C) A description, and the date, of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (h)(1) of this section.

(2) If an owner or operator has elected to implement the requirements of paragraph (h)(1) of this section for a monitored parameter with respect to an item of equipment and a period of 6 consecutive months has passed without an excursion as defined in paragraph (h)(2)(iv) of this section, the owner or operator is no longer required to record the daily average (or batch cycle daily average) value for any operating day when the daily average (or batch cycle daily average) value is less than the maximum or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months, if the parameter limit and the monitoring accomplished during the period prior to the compliance date was required and/or approved by the Administrator.

(i) If the owner or operator elects not to retain the daily average (or batch cycle daily average) values, the owner or operator shall notify the Administrator in the next Periodic Report. The notification shall identify the parameter and unit of equipment.

(ii) If, on any operating day after the owner or operator has ceased recording daily average (or batch cycle daily average) values as provided in paragraph (h)(2) of this section, there is an excursion as defined in paragraph (h)(2)(iv) of this section, the owner or operator shall immediately resume retaining the daily average (or batch cycle daily

average) value for each operating day and shall notify the Administrator in the next Periodic Report. The owner or operator shall continue to retain each daily average (or batch cycle daily average) value until another period of 6 consecutive months has passed without an excursion as defined in paragraph (h)(2)(iv) of this section.

(iii) The owner or operator shall retain the records specified in paragraphs (h)(1)(i), (h)(1)(ii), and (h)(1)(vi) of this section, for the duration specified in paragraph (h) of this section. For any calendar week, if compliance with paragraphs (h)(1)(i) through (h)(1)(iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation other than a start-up, shutdown, or malfunction.

(iv) For purposes of paragraph (h) of this section, an excursion means that the daily average (or batch cycle daily average) value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value, except as provided in paragraphs (h)(2)(iv)(A) and (h)(2)(iv)(B) of this section.

(A) The daily average (or batch cycle daily average) value during any start-up, shutdown, or malfunction shall not be considered an excursion for purposes of paragraph (h)(2) of this section, if the owner or operator follows the applicable provisions of the start-up, shutdown, and malfunction plan required by §63.6(e)(3).

(B) An excused excursion, as described in §63.1334(g), shall not be considered an excursion for purposes of paragraph (h)(2) of this section.

TABLES TO SUBPT. JJJ OF PART 63

TABLE 1.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART JJJ AFFECTED SOURCES

Reference	Applies to subpart JJJ	Comment
63.1(a)(1)	Yes	§63.1312 specifies definitions in addition to or that supersede definitions in §63.2.
63.1(a)(2)–63.1(a)(3)	Yes.	
63.1(a)(4)	Yes	Subpart JJJ (this table) specifies the applicability of each paragraph in subpart A to subpart JJJ.
63.1(a)(5)	No	Reserved.
63.1(a)(6)–63.1(a)(8)	Yes.	
63.1(a)(9)	No	Reserved.
63.1(a)(10)	No	Subpart JJJ and other cross-referenced subparts specify calendar or operating day.
63.1(a)(11)	Yes.	
63.1(a)(12)–63.1(a)(14)	Yes.	
63.1(b)(1)	Yes	Subpart JJJ (this table) specifies the applicability of each paragraph in subpart A to subpart JJJ.
63.1(b)(2)	Yes.	
63.1(b)(3)	No	§63.1310(b) provides documentation requirements for TPPUs not considered affected sources.
63.1(c)(1)	Yes	Subpart JJJ (this table) specifies the applicability of each paragraph in subpart A to subpart JJJ.
63.1(c)(2)	No	Area sources are not subject to subpart JJJ.
63.1(c)(3)	No	Reserved.
63.1(c)(4)	Yes.	
63.1(c)(5)	Yes	Except that affected sources are not required to submit notifications overridden by this table.
63.1(d)	No	Reserved.
63.1(e)	Yes.	
63.2	Yes	§63.1312 specifies those subpart A definitions that apply to subpart JJJ.
63.3	Yes	Subpart JJJ specifies those units of measure that apply to subpart JJJ.
63.4(a)(1)–63.4(a)(3)	Yes.	
63.4(a)(4)	No	Reserved.
63.4(a)(5)	Yes.	
63.4(b)	Yes.	
63.4(c)	Yes.	

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Pt. 63, Subpt. JJJ, Table 1

TABLE 1.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART JJJ AFFECTED SOURCES—
Continued

Reference	Applies to subpart JJJ	Comment
63.5(a)	Yes.	
63.5(b)(1)	Yes.	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes.	
63.5(b)(4)	No	Area sources are not subject to subpart JJJ.
63.5(b)(5)	Yes.	
63.5(b)(6)	No	§ 63.1310(i) specifies requirements.
63.5(c)	No	Reserved.
63.5(d)(1)(i)	No.	
63.5(d)(1)(ii)	Yes	Except that for affected sources subject to subpart JJJ, emission estimates specified in § 63.5(d)(1)(ii)(H) are not required.
63.5(d)(1)(iii)	Yes	Except that § 63.1335(e)(5) specifies Notification of Compliance Status requirements.
63.5(d)(2)	No.	
63.5(d)(3)	Yes	Except § 63.5(d)(3)(ii) does not apply.
63.5(d)(4)	Yes.	
63.5(e)	Yes.	
63.5(f)(1)	Yes.	
63.5(f)(2)	Yes	Except that where § 63.5(d)(1) is referred to, § 63.5(d)(1)(i) does not apply.
63.6(a)	Yes.	
63.6(b)(1)	Yes.	
63.6(b)(2)	Yes.	
63.6(b)(3)	Yes.	
63.6(b)(4)	Yes.	
63.6(b)(5)	Yes.	
63.6(b)(6)	No	Reserved.
63.6(b)(7)	Yes.	
63.6(c)(1)	Yes	§ 63.1311 specifies the compliance date.
63.6(c)(2)	Yes.	
63.6(c)(3)	No	Reserved.
63.6(c)(4)	No	Reserved.
63.6(c)(5)	Yes.	
63.6(d)	No	Reserved.
63.6(e)	Yes	Except the plan, and any records or reports of start-up, shutdown and malfunction do not apply to Group 2 emission points, unless they are included in an emissions average.
63.6(f)(1)	Yes.	
63.6(f)(2)	Yes	Except § 63.7(c), as referred to in § 63.6(f)(2)(iii)(D), does not apply.
63.6(f)(3)	Yes.	
63.6(g)	Yes.	
63.6(h)	No	Subpart JJJ does not require opacity and visible emission standards.
63.6(i)	Yes	Except for § 63.6(i)(15), which is reserved.
63.6(j)	Yes.	
63.7(a)(1)	Yes.	
63.7(a)(2)	No	§ 63.1335(e)(5) specifies submittal dates.
63.7(a)(3)	Yes.	
63.7(b)	No	§ 63.1333(a)(4) specifies notification requirements.
63.7(c)	No.	
63.7(d)	Yes.	
63.7(e)	Yes	Except that performance tests must be conducted at maximum representative operating conditions. In addition, some of the testing requirements specified in subpart JJJ are not consistent with § 63.7(e)(3).
63.7(f)	Yes.	
63.7(g)	Yes	Except that references to the Notification of Compliance Status report in § 63.9(h) are replaced with the requirements in § 63.1335(e)(5).
63.7(h)	Yes	Except § 63.7(h)(4)(ii) is not applicable, since the site-specific test plans in § 63.7(c)(3) are not required.
63.8(a)(1)	Yes.	
63.8(a)(2)	No.	
63.8(a)(3)	No	Reserved.
63.8(a)(4)	Yes.	
63.8(b)(1)	Yes.	
63.8(b)(2)	No	Subpart JJJ specifies locations to conduct monitoring.

TABLE 1.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART JJJ AFFECTED SOURCES—
Continued

Reference	Applies to subpart JJJ	Comment
63.8(b)(3).		
63.8(c)(1)(i)	Yes.	
63.8(c)(1)(ii)	No.	
63.8(c)(1)(iii)	Yes.	
63.8(c)(2)	Yes.	
63.8(c)(3)	Yes.	
63.8(c)(4)	No	§ 63.1334 specifies monitoring frequency.
63.8(c)(5)—63.8(c)(8)	No.	
63.8(d)	No.	
63.8(e)	No.	
63.8(f)(1)—63.8(f)(3)	Yes.	
63.8(f)(4)(i)	No	Timeframe for submitting request is specified in § 63.1335(e).
63.8(f)(4)(ii)	No.	
63.8(f)(4)(iii)	No.	
63.8(f)(5)(i)	Yes.	
63.8(f)(5)(ii)	No.	
63.8(f)(5)(iii)	Yes.	
63.8(f)(6)	No	Subpart JJJ does not require continuous emission monitors.
63.8(g)	No	Data reduction procedures specified in § 63.1335(d).
63.9(a)	Yes.	
63.9(b)	No	Subpart JJJ does not require an initial notification.
63.9(c)	Yes.	
63.9(d)	Yes.	
63.9(e)	No.	
63.9(f)	No	Subpart JJJ does not require opacity and visible emission standards.
63.9(g)	No.	
63.9(h)	No	§ 63.1335(e)(5) specifies Notification of Compliance Status requirements.
63.9(i)	Yes.	
63.9(j)	No.	
63.10(a)	Yes.	
63.10(b)(1)	Yes.	
63.10(b)(2)	Yes.	
63.10(b)(3)	No	§ 63.1310(b) requires documentation of sources that are not affected sources.
63.10(c)	No	§ 63.1335 specifies recordkeeping requirements.
63.10(d)(1)	Yes.	
63.10(d)(2)	No.	
63.10(d)(3)	No	Subpart JJJ does not require opacity and visible emission standards.
63.10(d)(4)	Yes.	
63.10(d)(5)	Yes	Except that reports required by § 63.10(d)(5)(i) may be submitted at the same time as Periodic Reports specified in § 63.1335(e)(6). The start-up, shutdown, and malfunction plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.
63.10(e)	No.	
63.10(f)	Yes.	
63.10(d)(4)	Yes.	
63.12	Yes.	
63.13	Yes.	
63.14	Yes.	
63.15	Yes.	

TABLE 2.—GROUP 1 STORAGE VESSELS AT EXISTING AFFECTED SOURCES

Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
75 ≤ capacity < 151	≥13.1

TABLE 2.—GROUP 1 STORAGE VESSELS AT EXISTING AFFECTED SOURCES—Continued

Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
151 ≥ capacity	≥5.2

^aMaximum true vapor pressure of total organic HAP at storage temperature.

TABLE 3.—GROUP 1 STORAGE VESSELS AT EXISTING AFFECTED SOURCES PRODUCING THE LISTED THERMOPLASTICS

Thermoplastic	Chemical ^a	Vessel capacity (cubic meters)	Vapor pressure ^b (kilopascals)
ASA/AMSAN ^c	Styrene/acrylonitrile mixture	≥3.78	≥0.47
	Acrylonitrile	≥75.7	≥1.62
Polystyrene, continuous processes		≥38 and <75.7	≥14.2
		≥75.7	≥1.9
Nitrile ^c	Acrylonitrile	≥ 13.25	≥ 1.8

^aVessel capacity and vapor pressure criteria are specific to the listed chemical. When chemical not listed (i.e., —), vessel capacity and vapor pressure criteria apply to all chemicals regulated by this rule for a given subcategory.^bMaximum true vapor pressure of total organic HAP at storage temperature.^cThe applicability criteria in Table 2 of this subpart shall be used for chemicals not specifically listed in this table (i.e., Table 3).

TABLE 4.—GROUP 1 STORAGE VESSELS AT NEW AFFECTED SOURCES

Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
38 ≤ capacity < 151	≥13.1
151 ≤ capacity	≥0.7

^aMaximum true vapor pressure of total organic HAP at storage temperature.

TABLE 5.—GROUP 1 STORAGE VESSELS AT NEW AFFECTED SOURCES PRODUCING THE LISTED THERMOPLASTICS

Thermoplastic	Chemical ^a	Vessel capacity (cubic meters)	Vapor pressure ^b (kilopascals)
ASA/AMSAN ^c	Styrene/acrylonitrile mixture	≥3.78	≥0.47.
	Acrylonitrile	≥75.7	≥1.62.
SAN, continuous		≥2,271	0.5≤vp<0.7.
		≥151	0.7≤vp≤10.
		≥30 and <151	vp≥10.
		≥151	vp≥10.
Nitrile ^c	Acrylonitrile	≥13.25	≥1.8.
Polystyrene, continuous processes		≥19.6 and <45.4	vp≥7.48.
		≥45.4 and <109.8	vp≥0.61.
		≥109.8	vp≥0.53.
ABS, continuous mass	Styrene	≥45.43	≥0.078.
		≥38 and <45.43	vp≥13.1.
		≥45.43	vp≥0.53.

^aVessel capacity and vapor pressure criteria are specific to the listed chemical. When chemical not listed (i.e., —), vessel capacity and vapor pressure criteria apply to all chemicals regulated by this rule for a given subcategory.^bMaximum true vapor pressure of total organic HAP at storage temperature.^cThe applicability criteria in Table 4 of this subpart shall be used for chemicals not specifically listed in this table (i.e., Table 5).

TABLE 6.—KNOWN ORGANIC HAZARDOUS AIR POLLUTANTS FROM THERMOPLASTIC PRODUCTS

Thermoplastic product/ subcategory	Organic HAP/chemical name (CAS No.)						
	Acetal- dehyde (75–07–0)	Acrylonitrile (107–13–1)	1,3 Buta- diene (106– 99–0)	1,4– Dioxane (123–91–1)	Ethylene Glycol (107–21–1)	Methanol (67–56–1)	Styrene (100–42–5)
ABS latex	✓	✓	✓
ABS using a batch emul- sion process	✓	✓	✓
ABS using a batch sus- pension process	✓	✓	✓
ABS using a continuous emulsion process	✓	✓	✓
ABS using a continuous mass process	✓	✓	✓
ASA/AMSAN	✓	✓	✓
EPS	✓
MABS	✓	✓	✓
MBS	✓	✓
Nitrile resin	✓
PET using a batch di- methyl terephthalate process	✓	✓	✓	✓
PET using a batch ter- ephthalic acid process	✓	✓	✓
PET using a continuous dimethyl terephthalate process	✓	✓	✓	✓
PET using a continuous terephthalic acid proc- ess	✓	✓	✓
PET using a continuous terephthalic acid high viscosity multiple end finisher process	✓	✓	✓
Polystyrene resin using a batch process	✓
Polystyrene resin using a continuous process	✓
SAN using a batch proc- ess	✓	✓
SAN using a continuous process	✓	✓

AAACAS No.=Chemical Abstract Service Number.

AAAABS=Acrylonitrile butadiene styrene resin.

AAAASA/AMSAN=Acrylonitrile styrene resin/alpha methyl styrene acrylonitrile resin.

AAAEPS=expandable polystyrene resin.

AAAMABS=methyl methacrylate acrylonitrile butadiene styrene resin.

AAAPET=poly(ethylene terephthalate) resin.

AAAAAN=styrene acrylonitrile resin.

AAAMBS=methyl methacrylate butadiene styrene resin.

TABLE 7.—GROUP 1 BATCH PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Control device	Parameters to be monitored	Recordkeeping and reporting requirements for monitored parameters
Thermal Incinerator	Firebox tempera- ture ^a .	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the average firebox temperature measured during the performance test—NCS.^c 3. Record the batch cycle daily average firebox temperature as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}

TABLE 7.—GROUP 1 BATCH PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS—Continued

Control device	Parameters to be monitored	Recordkeeping and reporting requirements for monitored parameters
Catalytic Incinerator	Temperature upstream and downstream of the catalyst bed.	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the average upstream and downstream temperatures and the average temperature difference across the catalyst bed measured during the performance test—NCS.^c 3. Record the batch cycle daily average upstream temperature and temperature difference across catalyst bed as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average upstream temperatures that are below the minimum upstream temperature established in the NCS or operating permit—PR.^{d,e} 5. Report all batch cycle daily average temperature differences across the catalyst bed that are below the minimum difference established in the NCS or operating permit—PR.^{d,e} 6. Report all instances when monitoring data are not collected.^e
Boiler or Process Heater with a design heat input capacity less than 44 megawatts and where the batch process vents or aggregate batch vent streams are not introduced with or used as the primary fuel.	Firebox temperature ^a .	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the average firebox temperature measured during the performance test—NCS.^c 3. Record the batch cycle daily average firebox temperature as specified in § 63.1326(e)(2).^d 4. Report all batch cycle daily average temperatures that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}
Flare	Presence of a flame at the pilot light.	<ol style="list-style-type: none"> 1. Hourly records of whether the monitor was continuously operating during batch emission episodes, or portions thereof, selected for control and whether the pilot flame was continuously present during said periods. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.^c 3. Record the times and durations of all periods during batch emission episodes, or portions thereof, selected for control when a pilot flame is absent or the monitor is not operating. 4. Report the times and durations of all periods during batch emission episodes, or portions thereof, selected for control when all pilot flames of a flare are absent—PR.^d
Scrubber for halogenated batch process vents or aggregate batch vent streams (Note: Controlled by a combustion device other than a flare).	pH of scrubber effluent, and.	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the average pH of the scrubber effluent measured during the performance test—NCS.^c 3. Record the batch cycle daily average pH of the scrubber effluent as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average pH values of the scrubber effluent that are below the minimum operating pH established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}
Do	Scrubber liquid flow rate.	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the scrubber liquid flow rate measured during the performance test—NCS.^c 3. Record the batch cycle daily average scrubber liquid flow rate as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average scrubber liquid flow rates that are below the minimum flow rate established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}
Absorber ^f	Exit temperature of the absorbing liquid, and.	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the average exit temperature of the absorbing liquid measured during the performance test—NCS.^c 3. Record the batch cycle daily average exit temperature of the absorbing liquid as specified in § 63.1326(e)(2) for each batch cycle. 4. Report all the batch cycle daily average exit temperatures of the absorbing liquid that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}
Do	Exit specific gravity for the absorbing liquid.	<ol style="list-style-type: none"> 1. Continuous records as specified in § 63.1326(e)(1).^b 2. Record and report the average exit specific gravity measured during the performance test—NCS.^c 3. Record the batch cycle daily average exit specific gravity as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average exit specific gravity values that are below the minimum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR.^{d,e}

TABLE 7.—GROUP 1 BATCH PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS—Continued

Control device	Parameters to be monitored	Recordkeeping and reporting requirements for monitored parameters
Condenser ^f	Exit (product side) temperature.	1. Continuous records as specified in § 63.1326(e)(1). ^b 2. Record and report the average exit temperature measured during the performance test—NCS. ^c 3. Record the batch cycle daily average exit temperature as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average exit temperatures that are above the maximum operating temperature established in the NCS or operating permit and all instances when monitoring data are not collected—PR. ^{d,e}
Carbon Adsorber ^f	Total regeneration stream mass flow during carbon bed regeneration cycle(s), and.	1. Record the total regeneration stream mass flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass flow during each carbon bed regeneration cycle measured during the performance test—NCS. ^c 3. Report all carbon bed regeneration cycles when the total regeneration stream mass flow is above the maximum mass flow rate established in the NCS or operating permit—PR. ^{d,e}
Do	Temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle(s).	1. Record the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s). 2. Record and report the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s) measured during the performance test—NCS. ^c 3. Report all carbon bed regeneration cycles when the temperature of the carbon bed after regeneration, or within 15 minutes of completing any cooling cycle(s), is above the maximum temperature established in the NCS or operating permit—PR. ^{d,e}
All Control Devices	Presence of flow diverted to the atmosphere from the control device or.	1. Hourly records of whether the flow indicator was operating during batch emission episodes, or portions thereof, selected for control and whether flow was detected at any time during said periods as specified in § 63.1326(e)(3). 2. Record and report the times and durations of all periods during batch emission episodes, or portions thereof, selected for control when emissions are diverted through a bypass line or the flow indicator is not operating—PR. ^d
Do	Monthly inspections of sealed valves.	1. Records that monthly inspections were performed as specified in § 63.1326(e)(4)(i). 2. Record and report all monthly inspections that show the valves are not closed or the seal has been changed—PR. ^d
Absorber, Condenser, and Carbon Adsorber (as an alternative to the requirements previously presented in this table).	Concentration level or reading indicated by an organic monitoring device at the outlet of the control device.	1. Continuous records as specified in § 63.1326(e)(1). ^b 2. Record and report the average concentration level or reading measured during the performance test—NCS. ^c 3. Record the batch cycle daily average concentration level or reading as specified in § 63.1326(e)(2). 4. Report all batch cycle daily average concentration levels or readings that are above the maximum concentration or reading established in the NCS or operating permit and all instances when monitoring data are not collected—PR. ^{d,e}

^a Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^b "Continuous records" is defined in § 63.111.

^c NCS = Notification of Compliance Status described in § 63.1335(e)(5).

^d PR = Periodic Reports described in § 63.1335(e)(6).

^e The periodic reports shall include the duration of periods when monitoring data are not collected as specified in § 63.1335(e)(6)(iii)(C).

^f Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

TABLE 8.—OPERATING PARAMETERS FOR WHICH LEVELS ARE REQUIRED TO BE ESTABLISHED FOR CONTINUOUS AND BATCH PROCESS VENTS AND AGGREGATE BATCH VENT STREAMS

Device	Parameters to be monitored	Established operating parameter(s)
Thermal incinerator	Firebox temperature	Minimum temperature.
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed.	Minimum upstream temperature; and minimum temperature difference across the catalyst bed.
Boiler or process heater	Firebox temperature	Minimum temperature.
Scrubber for halogenated vents	pH of scrubber effluent; and scrubber liquid flow rate.	Minimum pH; and minimum flow rate.

TABLE 8.—OPERATING PARAMETERS FOR WHICH LEVELS ARE REQUIRED TO BE ESTABLISHED FOR CONTINUOUS AND BATCH PROCESS VENTS AND AGGREGATE BATCH VENT STREAMS—Continued

Device	Parameters to be monitored	Established operating parameter(s)
Absorber	Exit temperature of the absorbing liquid; and exit specific gravity of the absorbing liquid.	Minimum temperature; and minimum specific gravity.
Condenser	Exit temperature	Maximum temperature.
Carbon absorber	Total regeneration stream mass flow during carbon bed regeneration cycle; and temperature of the carbon bed after regeneration (and within 15 minutes of completing any cooling cycle(s)).	Maximum mass flow; and maximum temperature.
Other devices (or as an alternate to the requirements previously presented in this table).	HAP concentration level or reading at outlet of device.	Maximum HAP concentration or reading.

^aConcentration is measured instead of an operating parameter.

APPENDIX A TO PART 63—TEST METHODS

METHOD 301—FIELD VALIDATION OF POLLUTANT MEASUREMENT METHODS FROM VARIOUS WASTE MEDIA

1. Applicability and principle

1.1 *Applicability.* This method, as specified in the applicable subpart, is to be used whenever a source owner or operator (hereafter referred to as an “analyst”) proposes a test method to meet a U.S. Environmental Protection Agency (EPA) requirement in the absence of a validated method. This Method includes procedures for determining and documenting the quality, i.e., systematic error (bias) and random error (precision), of the measured concentrations from an effected source. This method is applicable to various waste media (i.e., exhaust gas, wastewater, sludge, etc.).

1.1.1 If EPA currently recognizes an appropriate test method or considers the analyst's test method to be satisfactory for a particular source, the Administrator may waive the use of this protocol or may specify a less rigorous validation procedure. A list of validated methods may be obtained by contacting the Emission Measurement Technical Information Center (EMTIC), Mail Drop 19, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, (919) 541-0200. Procedures for obtaining a waiver are in Section 12.0.

1.1.2 This method includes optional procedures that may be used to expand the applicability of the proposed method. Section 7.0 involves ruggedness testing (Laboratory Evaluation), which demonstrates the sensitivity of the method to various parameters. Section 8.0 involves a procedure for including sample stability in bias and precision for assessing sample recovery and analysis times; Section 9.0 involves a procedure for the determination of the practical limit of quantitation for determining the lower limit of the method. These optional procedures are

required for the waiver consideration outlined in Section 12.0.

1.2 *Principle.* The purpose of these procedures is to determine bias and precision of a test method at the level of the applicable standard. The procedures involve (a) introducing known concentrations of an analyte or comparing the test method against a validated test method to determine the method's bias and (b) collecting multiple or collocated simultaneous samples to determine the method's precision.

1.2.1 *Bias.* Bias is established by comparing the method's results against a reference value and may be eliminated by employing a correction factor established from the data obtained during the validation test. An offset bias may be handled accordingly. Methods that have bias correction factors outside 0.7 to 1.3 are unacceptable. Validated method to proposed method comparisons, section 6.2, requires a more restrictive test of central tendency and a lower correction factor allowance of 0.90 to 1.10.

1.2.2 *Precision.* At the minimum, paired sampling systems shall be used to establish precision. The precision of the method at the level of the standard shall not be greater than 50 percent relative standard deviation. For a validated method to proposed method equivalency comparisons, section 6.2, the analyst must demonstrate that the precision of the proposed test method is as precise as the validated method for acceptance.

2. Definitions

2.1 *Negative bias.* Bias resulting when the measured result is less than the “true” value.

2.2 *Paired sampling system.* A sampling system capable of obtaining two replicate samples that were collected as closely as possible in sampling time and sampling location.

2.3 *Positive bias.* Bias resulting when the measured result is greater than the “true” value.

2.4 *Proposed method.* The sampling and analytical methodology selected for field validation using the method described herein.

2.5 *Quadruplet sampling system.* A sampling system capable of obtaining four replicate samples that were collected as closely as possible in sampling time and sampling location.

2.6 *Surrogate compound.* A compound that serves as a model for the types of compounds being analyzed (i.e., similar chemical structure, properties, behavior). The model can be distinguished by the method from the compounds being analyzed.

3. Reference Material

The reference materials shall be obtained or prepared at the level of the standard. Additional runs with higher and lower reference material concentrations may be made to expand the applicable range of the method, in accordance with the ruggedness test procedures.

3.1 *Exhaust Gas Tests.* The analyst shall obtain a known concentration of the reference material (i.e., analyte of concern) from an independent source such as a specialty gas manufacturer, specialty chemical company, or commercial laboratory. A list of vendors may be obtained from EMTIC (see Section 1.1.1). The analyst should obtain the manufacturer's stability data of the analyte concentration and recommendations for recertification.

3.2 *Other Waste Media Tests.* The analyst shall obtain pure liquid components of the reference materials (i.e., analytes of concern) from an independent manufacturer and dilute them in the same type matrix as the source waste. The pure reference materials shall be certified by the manufacturer as to purity and shelf life. The accuracy of all diluted reference material concentrations shall be verified by comparing their response to independently-prepared materials (independently prepared in this case means prepared from pure components by a different analyst).

3.3 *Surrogate Reference Materials.* The analyst may use surrogate compounds, e.g., for highly toxic or reactive organic compounds, provided the analyst can demonstrate to the Administrator's satisfaction that the surrogate compound behaves as the analyte. A surrogate may be an isotope or one that contains a unique element (e.g., chlorine) that is not present in the source or a derivation of the toxic or reactive compound, if the derivative formation is part of the method's procedure. Laboratory experiments or literature data may be used to show behavioral acceptability.

3.4 *Isotopically Labeled Materials.* Isotope mixtures may contain the isotope and the natural analyte. For best results, the isotope labeled analyte concentration should be

more than five times the natural concentration of the analyte.

4. EPA Performance Audit Material

4.1 To assess the method bias independently, the analyst shall use (in addition to the reference material) an EPA performance audit material, if it is available. The analyst may contact EMTIC (see section 1.1.1) to receive a list of currently available EPA audit materials. If the analyte is listed, the analyst should request the audit material at least 30 days before the validation test. If an EPA audit material is not available, request documentation from the validation report reviewing authority that the audit material is currently not available from EPA. Include this documentation with the field validation report.

4.2 The analyst shall sample and analyze the performance audit sample three times according to the instructions provided with the audit sample. The analyst shall submit the three results with the field validation report. Although no acceptance criteria are set for these performance audit results, the analyst and reviewing authority may use them to assess the relative error of sample recovery, sample preparation, and analytical procedures and then consider the relative error in evaluating the measured emissions.

5. Procedure for Determination of Bias and Precision in the Field

The analyst shall select one of the sampling approaches below to determine the bias and precision of the data. After analyzing the samples, the analyst shall calculate the bias and precision according to the procedure described in section 6.0. When sampling a stationary source, follow the probe placement procedures in section 5.4.

5.1 *Isotopic Spiking.* This approach shall be used only for methods that require mass spectrometry (MS) analysis. Bias and precision are calculated by procedures described in section 6.1.

5.1.1 *Number of Samples and Sampling Runs.* Collect a total of 12 replicate samples by either obtaining six sets of paired samples or three sets of quadruplet samples.

5.1.2 *Spiking Procedure.* Spike all 12 samples with the reference material at the level of the standard. Follow the appropriate spiking procedures listed below for the applicable waste medium.

5.1.2.1 *Exhaust Gas Testing.* The spike shall be introduced as close to the tip of the sampling probe as possible.

5.1.2.1.1 *Gaseous Reference Material with Sorbent or Impinger Sampling Trains.* Sample the reference material (in the laboratory or in the field) at a concentration which is close to the allowable concentration standard for the time required by the method, and then sample the gas stream for an equal amount

of time. The time for sampling both the reference material and gas stream should be equal; however, the time should be adjusted to avoid sorbent breakthrough.

5.1.2.1.2 Gaseous Reference Material with Sample Container (Bag or Canister). Spike the sample containers after completion of each test run with an amount equal to the allowable concentration standard of the emission point. The final concentration of the reference material shall approximate the level of the emission concentration in the stack. The volume amount of reference material shall be less than 10 percent of the sample volume.

5.1.2.1.3 Liquid and Solid Reference Material with Sorbent or Impinger Trains. Spike the trains with an amount equal to the allowable concentration standard before sampling the stack gas. The spiking should be done in the field; however, it may be done in the laboratory.

5.1.2.1.4 Liquid and Solid Reference Material with Sample Container (Bag or Canister). Spike the containers at the completion of each test run with an amount equal to the level of the emission standard.

5.1.2.2 Other Waste Media. Spike the 12 replicate samples with the reference material either before or directly after sampling in the field.

5.2 Comparison Against a Validated Test Method. Bias and precision are calculated using the procedures described in section 6.2. This approach shall be used when a validated method is available and an alternative method is being proposed.

5.2.1 Number of Samples and Sampling Runs. Collect nine sets of replicate samples using a paired sampling system (a total of 18 samples) or four sets of replicate samples using a quadruplet sampling system (a total of 16 samples). In each sample set, the validated test method shall be used to collect and analyze half of the samples.

5.2.2 Performance Audit Exception. Conduct the performance audit as required in section 4.0 for the validated test method. Conducting a performance audit on the test method being evaluated is recommended.

5.3 Analyte Spiking. This approach shall be used when sections 5.1 and 5.2 are not applicable. Bias and precision are calculated using the procedures described in Section 6.3.

5.3.1 Number of Samples and Sampling Runs. Collect a total of 24 samples using the quadruplet sampling system (a total of 6 sets of replicate samples).

5.3.2 In each quadruplet set, spike half of the samples (two out of the four) with the reference material according to the applicable procedure in section 5.1.2.1 or 5.1.2.2.

5.4 Probe Placement and Arrangement for Stationary Source Stack or Duct Sampling. The probes shall be placed in the same horizontal plane. For paired sample probes the arrangement should be that the probe tip is 2.5 cm

from the outside edge of the other with a pitot tube on the outside of each probe. Other paired arrangements for the pitot tube may be acceptable. For quadruplet sampling probes, the tips should be in a 6.0 cm × 6.0 cm square area measured from the center line of the opening of the probe tip with a single pitot tube in the center or two pitot tubes with their location on either side of the probe tip configuration. An alternative arrangement should be proposed whenever the cross-sectional area of the probe tip configuration is approximately 5 percent of the stack or duct cross-sectional area.

6. Calculations

Data resulting from the procedures specified in section 5.0 shall be treated as follows to determine bias, correction factors, relative standard deviations, precision, and data acceptance.

6.1 Isotopic Spiking. Analyze the data for isotopic spiking tests as outlined in sections 6.1.1 through 6.1.6.

6.1.1 Calculate the numerical value of the bias using the results from the analysis of the isotopically spiked field samples and the calculated value of the isotopically labeled spike:

$$B = CS - S_m \quad \text{Eq. 301-1}$$

where:

B=Bias at the spike level.

S_m =Mean of the measured values of the isotopically spiked samples.

CS=Calculated value of the isotopically labeled spike.

6.1.2 Calculate the standard deviation of the S_i values as follows:

$$SD = \sqrt{\frac{\sum (S_i - S_m)^2}{(n-1)}}$$

Eq. 301-2

where:

S_i =Measured value of the isotopically labeled analyte in the i th field sample.

n =Number of isotopically spiked samples, 12.

6.1.3. Calculate the standard deviation of the mean (SDM) as follows:

$$SDM = \frac{SD}{\sqrt{n}}$$

Eq. 301-3

6.1.4 Test the bias for statistical significance by calculating the t-statistic,

$$t = \frac{|B|}{SDM}$$

Eq. 301-4

and compare it with the critical value of the two-sided t-distribution at the 95-percent confidence level and $n-1$ degrees of freedom. This critical value is 2.201 for the eleven degrees of freedom when the procedure specified in section 5.1.2 is followed. If the calculated t-value is greater than the critical value the bias is statistically significant and the analyst should proceed to evaluate the correction factor.

6.1.5 Calculation of a Correction Factor. If the t-test does not show that the bias is statistically significant, use all analytical results without correction and proceed to the precision evaluation. If the method's bias is statistically significant, calculate the correction factor, CF, using the following equation:

$$CF = \frac{1}{1 + \frac{B}{CS}}$$

Eq. 301-5

If the CF is outside the range of 0.70 to 1.30, the data and method are considered unacceptable. For correction factors within the range, multiply all analytical results by the CF to obtain the final values.

6.1.6 Calculation of the Relative Standard Deviation (Precision). Calculate the relative standard deviation as follows:

$$RSD = \left(\frac{SD}{S_m} \right) \times 100$$

Eq. 301-6

where S_m is the measured mean of the isotopically labeled spiked samples.

6.2 Comparison with Validated Method. Analyze the data for comparison with a validated method as outlined in sections 6.2.1 or 6.2.2, as appropriate. Conduct these procedures in order to determine if a proposed method produces results equivalent to a validated method. Make all necessary bias corrections for the validated method, as appropriate. If the proposed method fails either test, the method results are unacceptable, and conclude that the proposed method is not as precise or accurate as the validated method. For highly variable sources, additional precision checks may be necessary. The analyst should consult with the Administrator if a highly variable source is suspected.

6.2.1 Paired Sampling Systems.

6.2.1.1. Precision. Determine the acceptance of the proposed method's variance with respect to the variability of the validated method results. If a significant difference is determined, the proposed method and the results are rejected. Proposed methods dem-

onstrating F-values equal to or less than the critical value have acceptable precision.

6.2.1.2 Calculate the variance of the proposed method, S_p^2 , and the variance of the validated method, S_v^2 , using the following equation:

$$S_{(porv)}^2 = SD^2 \quad \text{Eq. 301-7}$$

where:

SD_v = Standard deviation provided with the validated method,

SD_p = Standard deviation of the proposed method calculated using Equation 301-9a.

6.2.1.3 The F-test. Determine if the variance of the proposed method is significantly different from that of the validated method by calculating the F-value using the following equation:

$$F = \frac{S_p^2}{S_v^2}$$

Eq. 301-8

Compare the experimental F value with the critical value of F. The critical value is 1.0 when the procedure specified in section 5.2.1 for paired trains is followed. If the calculated F is greater than the critical value, the difference in precision is significant and the data and proposed method are unacceptable.

6.2.1.4 Bias Analysis. Test the bias for statistical significance by calculating the t-statistic and determine if the mean of the differences between the proposed method and the validated method is significant at the 80-percent confidence level. This procedure requires the standard deviation of the validated method, SD_v , to be known. Employ the value furnished with the method. If the standard deviation of the validated method is not available, the paired replicate sampling procedure may not be used. Determine the mean of the paired sample differences, d_m , and the standard deviation, SD_d , of the differences, d_i 's, using Equation 301-2 where: d_i replaces S_i , d_m replaces S_m . Calculate the standard deviation of the proposed method, SD_p , as follows:

$$SD_p = SD_d - SD_v \quad \text{Eq. 301-9a}$$

(If $SD_v > SD_d$, let $SD = SD_d/1.414$).

Calculate the value of the t-statistic using the following equation:

$$t = \frac{d_m}{\left(\frac{SD_p}{\sqrt{n}} \right)}$$

Eq. 301-9

where n is the total number of paired samples. For the procedure in section 5.2.1, n equals nine. Compare the calculated t-statistic with the corresponding value from the table of the t-statistic. When nine runs are

conducted, as specified in section 5.2.1, the critical value of the t-statistic is 1.397 for eight degrees of freedom. If the calculated t-value is greater than the critical value the bias is statistically significant and the analyst should proceed to evaluate the correction factor.

6.2.1.5 *Calculation of a Correction Factor.* If the statistical test cited above does not show a significant bias with respect to the reference method, assume that the proposed method is unbiased and use all analytical results without correction. If the method's bias is statistically significant, calculate the correction factor, CF, as follows:

$$CF = \frac{1}{1 + \frac{d_m}{V_m}}$$

Eq. 301-10

where V_m is the mean of the validated method's values.

Multiply all analytical results by CF to obtain the final values. The method results, and the method, are unacceptable if the correction factor is outside the range of 0.9 to 1.10.

6.2.2 *Quadruplet Replicate Sampling Systems.*

6.2.2.1 *Precision.* Determine the acceptance of the proposed method's variance with respect to the variability of the validated method results. If a significant difference is determined the proposed method and the results are rejected.

6.2.2.2 Calculate the variance of the proposed method, S_p^2 , using the following equation:

$$S^2 = \frac{\sum d_i^2}{2n}$$

Eq. 301-11

where the d_i 's are the differences between the validated method values and the proposed method values.

6.2.2.3 *The F-test.* Determine if the variance of the proposed method is more variable than that of the validated method by calculating the F-value using Equation 301-8. Compare the experimental F value with the critical value of F. The critical value is 1.0 when the procedure specified in section 5.2.2 for quadruplet trains is followed. The calculated F should be less than or equal to the critical value. If the difference in precision is significant the results and the proposed method are unacceptable.

6.2.2.4 *Bias Analysis.* Test the bias for statistical significance at the 80 percent confidence level by calculating the t-statistic. Determine the bias (mean of the differences between the proposed method and the vali-

dated method, d_m) and the standard deviation, SD_d , of the differences. Calculate the standard deviation of the differences, SD_d , using Equation 301-2 and substituting d_i for S_i . The following equation is used to calculate d_i :

$$d_i = \frac{(V_{1i} + V_{2i})}{2} - \frac{(P_{1i} + P_{2i})}{2}$$

Eq. 301-12

and: V_{1i} =First measured value of the validated method in the i th test sample.

P_{1i} =First measured value of the proposed method in the i th test sample.

Calculate the t-statistic using Equation 301-9 where n is the total number of test sample differences (d_i). For the procedure in section 5.2.2, n equals four. Compare the calculated t-statistic with the corresponding value from the table of the t-statistic and determine if the mean is significant at the 80-percent confidence level. When four runs are conducted, as specified in section 5.2.2, the critical value of the t-statistic is 1.638 for three degrees of freedom. If the calculated t-value is greater than the critical value the bias is statistically significant and the analyst should proceed to evaluate the correction factor.

6.2.2.5 *Correction Factor Calculation.* If the method's bias is statistically significant, calculate the correction factor, CF, using Equation 301-10. Multiply all analytical results by CF to obtain the final values. The method results, and the method, are unacceptable if the correction factor is outside the range of 0.9 to 1.10.

6.3 *Analyte Spiking.* Analyze the data for analyte spike testing as outlined in Sections 6.3.1 through 6.3.3.

6.3.1 *Precision.*

6.3.1.1 *Spiked Samples.* Calculate the difference, d_i , between the pairs of the spiked proposed method measurements for each replicate sample set. Determine the standard deviation (SD_s) of the spiked values using the following equation:

$$SD_s = \sqrt{\frac{\sum d_i^2}{2n}}$$

Eq. 301-13

where: n = Number of runs.

Calculate the relative standard deviation of the proposed spiked method using Equation 301-6 where S_m is the measured mean of the analyte spiked samples. The proposed method is unacceptable if the RSD is greater than 50 percent.

6.3.1.2 *Unspiked Samples.* Calculate the standard deviation of the unspiked values

using Equation 301-13 and the relative standard deviation of the proposed unspiked method using Equation 301-6 where S_m is the measured mean of the analyte spiked samples. The RSD must be less than 50 percent.

6.3.2 *Bias*. Calculate the numerical value of the bias using the results from the analysis of the spiked field samples, the unspiked field samples, and the calculated value of the spike:

$$B = S_m - M_m - CS$$

Eq. 301-14

where: B = Bias at the spike level.

S_m = Mean of the spiked samples.

M_m = Mean of the unspiked samples.

CS = Calculated value of the spiked level.

6.3.2.1 Calculate the standard deviation of the mean using the following equation where SD_s and SD_u are the standard deviations of the spiked and unspiked sample values respectively as calculated using Equation 301-13.

$$SD = \sqrt{SD_s^2 + SD_u^2}$$

Eq. 301-15

6.3.2.2 Test the bias for statistical significance by calculating the t-statistic using Equation 301-4 and comparing it with the critical value of the two-sided t-distribution at the 95-percent confidence level and n-1 degrees of freedom. This critical value is 2.201 for the eleven degrees of freedom.

6.3.3 *Calculation of a Correction Factor*. If the t-test shows that the bias is not statistically significant, use all analytical results without correction. If the method's bias is statistically significant, calculate the correction factor using Equation 301-5. Multiply all analytical results by CF to obtain the final values.

7. Ruggedness Testing (Optional)

7.1 *Laboratory Evaluation*.

7.1.1 Ruggedness testing is a useful and cost-effective laboratory study to determine the sensitivity of a method to certain parameters such as sample collection rate, interferant concentration, collecting medium temperature, or sample recovery temperature. This Section generally discusses the principle of the ruggedness test. A more detailed description is presented in citation 10 of Section 13.0.

7.1.2 In a ruggedness test, several variables are changed simultaneously rather than one variable at a time. This reduces the number of experiments required to evaluate the effect of a variable. For example, the effect of seven variables can be determined in eight experiments rather than 128 (W.J. Youden, Statistical Manual of the Association of Official Analytical Chemists, Association of Official Analytical Chemists, Washington, DC, 1975, pp. 33–36).

7.1.3 Data from ruggedness tests are helpful in extending the applicability of a test method to different source concentrations or source categories.

8. Procedure for Including Sample Stability in Bias and Precision Evaluations

8.1 *Sample Stability*.

8.1.1 The test method being evaluated must include procedures for sample storage and the time within which the collected samples shall be analyzed.

8.1.2 This section identifies the procedures for including the effect of storage time in bias and precision evaluations. The evaluation may be deleted if the test method specifies a time for sample storage.

8.2 *Stability Test Design*. The following procedures shall be conducted to identify the effect of storage times on analyte samples. Store the samples according to the procedure specified in the test method. When using the analyte spiking procedures (section 5.3), the study should include equal numbers of spiked and unspiked samples.

8.2.1 *Stack Emission Testing*.

8.2.1.1 For sample container (bag or canister) and impinger sampling systems, sections 5.1 and 5.3, analyze six of the samples at the minimum storage time. Then analyze the same six samples at the maximum storage time.

8.2.1.2 For sorbent and impinger sampling systems, sections 5.1 and 5.3, that require extraction or digestion, extract or digest six of the samples at the minimum storage time and extract or digest six other samples at the maximum storage time. Analyze an aliquot of the first six extracts (digestates) at both the minimum and maximum storage times. This will provide some freedom to analyze extract storage impacts.

8.2.1.3 For sorbent sampling systems, sections 5.1 and 5.3, that require thermal desorption, analyze six samples at the minimum storage time. Analyze another set of six samples at the maximum storage time.

8.2.1.4 For systems set up in accordance with section 5.2, the number of samples analyzed at the minimum and maximum storage times shall be half those collected (8 or 9). The procedures for samples requiring extraction or digestion should parallel those in section 8.2.1.

8.2.2 *Other Waste Media Testing*. Analyze half of the replicate samples at the minimum storage time and the other half at the maximum storage time in order to identify the effect of storage times on analyte samples.

9. Procedure for Determination of Practical Limit of Quantitation (Optional)

9.1 *Practical Limit of Quantitation*.

9.1.1 The practical limit of quantitation (PLQ) is the lowest level above which quantitative results may be obtained with an acceptable degree of confidence. For this protocol, the PLQ is defined as 10 times the standard deviation, s_0 , at the blank level. This PLQ corresponds to an uncertainty of ± 30 percent at the 99-percent confidence level.

9.1.2 The PLQ will be used to establish the lower limit of the test method.

9.2 *Procedure I for Estimating s_0* . This procedure is acceptable if the estimated PLQ is no more than twice the calculated PLQ. If the PLQ is greater than twice the calculated PLQ use Procedure II.

9.2.1 Estimate the PLQ and prepare a test standard at this level. The test standard could consist of a dilution of the reference material described in section 3.0.

9.2.2 Using the normal sampling and analytical procedures for the method, sample and analyze this standard at least seven times in the laboratory.

9.2.3 Calculate the standard deviation, s_0 , of the measured values.

9.2.4 Calculate the PLQ as 10 times s_0 .

9.3 *Procedure II for Estimating s_0* . This procedure is to be used if the estimated PLQ is more than twice the calculated PLQ.

9.3.1 Prepare two additional standards at concentration levels lower than the standard used in Procedure I.

9.3.2 Sample and analyze each of these standards at least seven times.

9.3.3 Calculate the standard deviation for each concentration level.

9.3.4 Plot the standard deviations of the three test standards as a function of the standard concentrations.

9.3.5 Draw a best-fit straight line through the data points and extrapolate to zero concentration. The standard deviation at zero concentration is S_0 .

9.3.6 Calculate the PLQ as 10 times S_0 .

10.0 Field Validation Report Requirements

The field validation report shall include a discussion of the regulatory objectives for the testing which describe the reasons for the test, applicable emission limits, and a description of the source. In addition, validation results shall include:

10.1 Summary of the results and calculations shown in section 6.0.

10.2 Reference material certification and value(s).

10.3 Performance audit results or letter from the reviewing authority stating the audit material is currently not available.

10.4 Laboratory demonstration of the quality of the spiking system.

10.5 Discussion of laboratory evaluations.

10.6 Discussion of field sampling.

10.7 Discussion of sample preparations and analysis.

10.8 Storage times of samples (and extracts, if applicable).

10.9 Reasons for eliminating any results.

11. Followup Testing

The correction factor calculated in section 6.0 shall be used to adjust the sample concentrations in all followup tests conducted at the same source. These tests shall consist of at least three replicate samples, and the average shall be used to determine the pollutant concentration. The number of samples to be collected and analyzed shall be as follows, depending on the validated method precision level:

11.1 Validated relative standard deviation (RSD) $\leq \pm 15$ Percent. Three replicate samples.

11.2 Validated RSD $\leq \pm 30$ Percent. Six replicate samples.

11.3 Validated RSD $\leq \pm 50$ Percent. Nine replicate samples.

11.4 Equivalent method. Three replicate samples.

12. Procedure for Obtaining a Waiver

12.1 *Waivers*. These procedures may be waived or a less rigorous protocol may be granted for site-specific applications. The following are three example situations for which a waiver may be considered.

12.1.1 "*Similar*" Sources. If the test method has been validated previously at a "similar" source, the procedures may be waived provided the requester can demonstrate to the satisfaction of the Administrator that the sources are "similar." The methods' applicability to the "similar" source may be demonstrated by conducting a ruggedness test as described in section 6.0.

12.1.2 "*Documented*" Methods. In some cases, bias and precision may have been documented through laboratory tests or protocols different from this method. If the analyst can demonstrate to the satisfaction of the Administrator that the bias and precision apply to a particular application, the Administrator may waive these procedures or parts of the procedures.

12.1.3 "*Conditional*" Test Methods. When the method has been demonstrated to be valid at several sources, the analyst may seek a "conditional" method designation from the Administrator. "Conditional" method status provides an automatic waiver from the procedures provided the test method is used within the stated applicability.

12.2 *Application for Waiver*. In general, the requester shall provide a thorough description of the test method, the intended application, and results of any validation or other supporting documents. Because of the many potential situations in which the Administrator may grant a waiver, it is neither possible nor desirable to prescribe the exact criteria for a waiver. At a minimum, the requester is responsible for providing the following.

12.2.1 A clearly written test method, preferably in the format of 40 CFR part 60, appendix A Test Methods. The method must include an applicability statement, concentration range, precision, bias (accuracy), and time in which samples must be analyzed.

12.2.2.2 Summaries (see section 10.0) of previous validation tests or other supporting documents. If a different procedure from that described in this method was used, the requester shall provide appropriate documents substantiating (to the satisfaction of the Administrator) the bias and precision values.

12.2.2.3 Results of testing conducted with respect to sections 7.0, 8.0, and 9.0.

12.2.3 Discussion of the applicability statement and arguments for approval of the waiver. This discussion should address as applicable the following: Applicable regulation, emission standards, effluent characteristics, and process operations.

12.3 *Requests for Waiver.* Each request shall be in writing and signed by the analyst. Submit requests to the Director, OAQPS, Technical Support Division, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

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METHOD 303—DETERMINATION OF VISIBLE EMISSIONS FROM BY-PRODUCT COKE OVEN BATTERIES

1. Applicability and Principle

1.1 *Applicability.* This method applies to the determination of visible emissions (VE) from the following by-product coke oven battery sources: Charging systems during charging, doors, topside port lids, and offtake systems on operating coke ovens; and collecting mains. In order for the test method results to be indicative of plant performance, the time of day of the run should vary.

1.2 *Principle.* A certified observer visually determines the VE from coke oven battery sources (the certification procedures are described in section 2). This method does not require that opacity of emissions be determined or that magnitude be differentiated.

1.3 Definitions.

1.3.1 *Bench.* The platform structure in front of the oven doors.

1.3.2 *By-product Coke Oven Battery.* A source consisting of a group of ovens connected by common walls, where coal undergoes destructive distillation under positive pressure to produce coke and coke oven gas, from which by-products are recovered.

1.3.3 *Charge or Charging Period.* The period of time that commences when coal begins to flow into an oven through a topside port and ends when the last charging port is recapped.

1.3.4 Charging System. An apparatus used to charge coal to a coke oven (e.g., a larry car for wet coal charging systems).

1.3.5 Coke Oven Door. Each end enclosure on the pusher side and the coking side of an oven. The chuck, or leveler-bar, door is considered part of the pusher side door. The coke oven door area includes the entire area on the vertical face of a coke oven between the bench and the top of the battery between two adjacent buck stays.

1.3.6 Coke Side. The side of a battery from which the coke is discharged from ovens at the end of the coking cycle.

1.3.7 Collecting Main. Any apparatus that is connected to one or more offtake systems and that provides a passage for conveying gases under positive pressure from the by-product coke oven battery to the by-product recovery system.

1.3.8 Consecutive Charges. Charges observed successively, excluding any charge during which the observer's view of the charging system or topside ports is obscured.

1.3.9 Damper-off. To close off the gas passage between the coke oven and the collecting main, with no flow of raw coke oven gas from the collecting main into the oven or into the oven's offtake system(s).

1.3.10 Decarbonization Period. The period of time for combusting oven carbon that commences when the oven lids are removed from an empty oven or when standpipe caps of an oven are opened. The period ends with the initiation of the next charging period for that oven.

1.3.11 Larry Car. An apparatus used to charge coal to a coke oven with a wet coal charging system.

1.3.12 Log Average. Logarithmic average as calculated in section 3.8.

1.3.13 Offtake System. Any individual oven apparatus that is stationary and provides a passage for gases from an oven to a coke oven battery collecting main or to another oven. Offtake system components include the standpipe and standpipe caps, goosenecks, stationary jumper pipes, mini-standpipes, and standpipe and gooseneck connections.

1.3.14 Operating Oven. Any oven not out of operation for rebuild or maintenance work extensive enough to require the oven to be skipped in the charging sequence.

1.3.15 Oven. A chamber in the coke oven battery in which coal undergoes destructive distillation to produce coke.

1.3.16 Push Side. The side of the battery from which the coke is pushed from ovens at the end of the coking cycle.

1.3.17 Run. The observation of visible emissions from topside port lids, offtake systems, coke oven doors, or the charging of a single oven in accordance with this method.

1.3.18 Shed. Structures for capturing coke oven emissions on the coke side or pusher

side of the coke oven battery, which route the emissions to a control device or system.

1.3.19 Standpipe Cap. An apparatus used to cover the opening in the gooseneck of an offtake system.

1.3.20 Topside Port Lid. A cover, removed during charging or decarbonizing, that is placed over the opening through which coal can be charged into the oven of a by-product coke oven battery.

1.3.21 Traverse Time. Accumulated time for a traverse as measured by a stopwatch. Traverse time includes time to stop and write down oven numbers but excludes time waiting for obstructions of view to clear or for time to walk around obstacles.

1.3.22 Visible Emissions (VE). Any emission seen by the unaided (except for corrective lenses) eye, excluding steam or condensing water.

2. Observer Certification

2.1 Certification Procedures. This method requires only the determination of whether VE occur and does not require the determination of opacity levels; therefore, observer certification according to Method 9 in appendix A to part 60 of this chapter is not required to obtain certification under this method. However, in order to receive Method 303 observer certification, the first-time observer (trainee) shall have attended the lecture portion of the Method 9 certification course. In addition, the trainee shall successfully complete the Method 303 training course, satisfy the field observation requirement, and demonstrate adequate performance and sufficient knowledge of Method 303. The Method 303 training course shall be conducted by or under the sanction of the EPA and shall consist of classroom instruction and field observations, and a proficiency test.

2.1.1 The classroom instruction shall familiarize the trainees with Method 303 through lecture, written training materials, and a Method 303 demonstration video. A successful completion of the classroom portion of the Method 303 training course shall be demonstrated by a perfect score on a written test. If the trainee fails to answer all of the questions correctly, the trainee may review the appropriate portion of the training materials and retake the test.

2.1.2 The field observations shall be a minimum of 12 hours and shall be completed before attending the Method 303 certification course. Trainees shall observe the operation of a coke oven battery as it pertains to Method 303, including topside operations, and shall also practice conducting Method 303 or similar methods. During the field observations, trainees unfamiliar with coke battery operations shall receive instruction from an experienced coke oven observer familiar with Method 303 or similar methods and the operation of coke batteries. The

trainee must verify completion of at least 12 hours of field observation prior to attending the Method 303 certification course.

2.1.3 All trainees must demonstrate proficiency in the application of Method 303 to a panel of three certified Method 303 observers, including an ability to differentiate coke oven emissions from condensing water vapor and smoldering coal. Each panel member shall have at least 120 days experience in reading visible emissions from coke ovens. The visible emissions inspections that will satisfy the experience requirement must be inspections of coke oven battery fugitive emissions from the emission points subject to emission standards under subpart L of this part (i.e., coke oven doors, topside port lids, offtake system(s), and charging operations), using either Method 303 or predecessor State or local test methods. A "day's experience" for a particular inspection is a day on which one complete inspection was performed for that emission point under Method 303 or a predecessor State or local method. A "day's experience" does not mean 8 or 10 hours performing inspections, or any particular time expressed in minutes or hours that may have been spent performing them. Thus, it would be possible for an individual to qualify as a Method 303 panel member for some emission points, but not others (e.g., an individual might satisfy the experience requirement for coke oven doors, but not topside port lids). Until November 15, 1994, the EPA may waive the certification requirement (but not the experience requirement) for panel members. The composition of the panel shall be approved by the EPA. The panel shall observe the trainee in a series of training runs and a series of certification runs. There shall be a minimum of 1 training run for doors, topside port lids, and offtake systems, and a minimum of 5 training runs (i.e., 5 charges) for charging. During training runs, the panel can advise the trainee on proper procedures. There shall be a minimum of 3 certification runs for doors, topside port lids, and offtake systems, and a minimum of 15 certification runs for charging (i.e., 15 charges). The certification runs shall be unassisted. Following the certification test runs, the panel shall approve or disapprove certification based on the trainee's performance during the certification runs. To obtain certification, the trainee shall demonstrate to the satisfaction of the panel a high degree of proficiency in performing Method 303. To aid in evaluating the trainee's performance, a checklist, provided by the EPA, will be used.

Caution: Because coke oven batteries have hazardous environments, the training materials and the field training shall cover the precautions required by the company to address health and safety hazards. Special emphasis shall be given to the Occupational Safety and Health Administration (OSHA)

regulations pertaining to exposure of coke oven workers (see Citation 3 in the Bibliography). In general, the regulation requires that special fire-retardant clothing and respirators be worn in certain restricted areas of the coke oven battery. The OSHA regulation also prohibits certain activities, such as chewing gum, smoking, and eating in these areas.

2.2 Observer Certification/Recertification. The coke oven observer certification is valid for 1 year from date of issue. The observer shall recertify annually by viewing the training video and answering all of the questions on the certification test correctly. Every 3 years, an observer shall be required to pass the proficiency test in section 2.1.3 in order to be certified.

2.3 The EPA (or applicable enforcement agency) shall maintain records reflecting a certified observer's successful completion of the proficiency test, which shall include the completed proficiency test checklists for the certification runs.

2.4 An owner or operator of a coke oven battery subject to subpart L of this part may observe a training and certification program under this section.

3. *Procedure for Determining VE From Charging Systems During Charging*

3.1 Number of Oven Charges. Refer to §63.309(c)(1) of this part for the number of oven charges to observe. The observer shall observe consecutive charges. Charges that are nonconsecutive can only be observed when necessary to replace observations terminated prior to the completion of a charge because of visual interferences. (See section 3.5.)

3.2 Data Records. Record all the information requested at the top of the charging system inspection sheet (Figure 303-1). For each charge, record the identification number of the oven being charged, the approximate beginning time of the charge, and the identification of the larry car used for the charge.

3.3 Observer Position. Stand in an area or move to positions on the topside of the coke oven battery with an unobstructed view of the entire charging system. For wet coal charging systems or non-pipeline coal charging systems, the observer should have an unobstructed view of the emission points of the charging system, including larry car hoppers, drop sleeves, and the topside ports of the oven being charged. Some charging systems are configured so that all emission points can only be seen from a distance of five ovens. For other batteries, distances of 8 to 12 ovens are adequate.

3.4 Observation. The charging period begins when coal begins to flow into the oven and ends when the last charging port is recapped. During the charging period, observe all of the potential sources of VE from the

entire charging system. For wet coal charging systems or non-pipeline coal charging systems, sources of VE typically include the larry car hoppers, drop sleeves, slide gates, and topside ports on the oven being charged. Any VE from an open standpipe cap on the oven being charged is included as charging VE.

3.4.1 Using an accumulative-type stopwatch with unit divisions of at least 0.5 seconds, determine the total time VE are observed as follows. Upon observing any VE emerging from any part of the charging system, start the stopwatch. Stop the watch when VE are no longer observed emerging, and restart the watch when VE reemerges.

3.4.2 When VE occur simultaneously from several points during a charge, consider the sources as one. Time overlapping VE as continuous VE. Time single puffs of VE only for the time it takes for the puff to emerge from the charging system. Continue to time VE in this manner for the entire charging period. Record the accumulated time to the nearest 0.5 second under "Visible emissions, seconds" on Figure 303-1.

3.5 Visual Interference. If fugitive VE from other sources at the coke oven battery site (e.g., door leaks or condensing water vapor from the coke oven wharf) prevent a clear view of the charging system during a charge, stop the stopwatch and make an appropriate notation under "Comments" on Figure 303-1. Label the observation an observation of an incomplete charge, and observe another charge to fulfill the requirements of section 3.1.

3.6 VE Exemptions. Do not time the following VE:

3.6.1 The VE from burning or smoldering coal spilled on top of the oven, topside port lid, or larry car surfaces;

NOTE: The VE from smoldering coal are generally white or gray. These VE generally have a plume of less than 1 meter long. If the observer cannot safely and with reasonable confidence determine that VE are from charging, do not count them as charging emissions.

3.6.2 The VE from the coke oven doors or from the leveler bar; or

3.6.3 The VE that drift from the top of a larry car hopper if the emissions had already been timed as VE from the drop sleeve.

NOTE: When the slide gate on a larry car hopper closes after the coal has been added to the oven, the seal may not be airtight. On occasions, a puff of smoke observed at the drop sleeves is forced past the slide gate up into the larry car hopper and may drift from the top; time these VE either at the drop sleeves or the hopper. If the larry car hopper does not have a slide gate or the slide gate is left open or partially closed, VE may quickly pass through the larry car hopper without

being observed at the drop sleeves and will appear as a strong surge of smoke; time these as charging VE.

3.7 Total Time Record. Record the total time that VE were observed for each charging operation in the appropriate column on the charging system inspection sheet.

3.8 Five charging observations (runs) obtained in accordance with this method shall be considered a valid set of observations for that day. No observation of an incomplete charge shall be included in a daily set of observations that is lower than the lowest reading for a complete charge. If both complete and incomplete charges have been observed, the daily set of observations shall include the five highest values observed. Four or three charging observations (runs) obtained in accordance with this method shall be considered a valid set of charging observations only where it is not possible to obtain five charging observations, because of visual interferences (see section 3.5) or inclement weather prevent a clear view of the charging system during charging. However, observations from three or four charges that satisfy these requirements shall not be considered a valid set of charging observations if use of such set of observations in a calculation under section 3.9 would cause the value of A to be less than 145.

3.9 Log Average. For each day on which a valid daily set of observations is obtained, calculate the daily 30-day rolling log average of seconds of visible emissions from the charging operation for each battery using these data and the 29 previous valid daily sets of observations, in accordance with the following equation:

$$\text{logarithmic average} = e^y - 1 \text{ (Eq. 303-1)}$$

where

$e=2.72$,

$$y = \frac{\ln(X_1 + 1) + \ln(X_2 + 1) + \dots + \ln(X_A + 1)}{A}$$

ln=Natural logarithm, and

X_i =Seconds of VE during the i^{th} charge.

A=150 or the number of valid observations (runs). The value of A shall not be less than 145, except for purposes of determinations under §63.306(c) (work practice plan implementation) or §63.306(d) (work practice plan revisions) of this part. No set of observations shall be considered valid for such a recalculation that otherwise would not be considered a valid set of observations for a calculation under this paragraph.

4. Procedure for Determining VE From Coke Oven Door Areas

The intent of this procedure is to determine VE from coke oven door areas by carefully observing the door area from a standard distance while walking at a normal pace.

4.1 Number of Runs. Refer to §63.309(c)(1) of this part for the appropriate number of runs.

4.2 Battery Traverse. To conduct a battery traverse, walk the length of the battery on the outside of the pusher machine and quench car tracks at a steady, normal walking pace, pausing to make appropriate entries on the door area inspection sheet (Figure 303-2). A single test run consists of two timed traverses, one for the coke side and one for the push side. The walking pace shall not exceed an average rate of 4 seconds per oven door, excluding time spent moving around stationary obstructions or waiting for other obstructions to move from positions blocking the view of a series of doors. Extra time is allowed for each leak for the observer to make the proper notation. A walking pace of 3 seconds per oven door has been found to be typical. Record the actual traverse time with a stopwatch.

4.2.1 Time only the time spent observing the doors and recording door leaks. To measure actual traverse time, use an accumulative-type stopwatch with unit divisions of 0.5 seconds or less. Exclude interruptions to the traverse and time required for the observer to move to positions where the view of the battery is unobstructed, or for obstructions, such as the door machine, to move from positions blocking the view of a series of doors.

4.2.2 Various situations may arise that will prevent the observer from viewing a door or a series of doors. Prior to the door inspection, the owner or operator may elect to temporarily suspend charging operations for the duration of the inspection, so that all of the doors can be viewed by the observer. The observer has two options for dealing with obstructions to view: (a) Stop the stopwatch and wait for the equipment to move or the fugitive emissions to dissipate before completing the traverse; or (b) stop the stopwatch, skip the affected ovens, and move to a position to continue the traverse. Restart the stopwatch and continue the traverse. After the completion of the traverse, if the equipment has moved or the fugitive emissions have dissipated, inspect the affected doors. If the equipment is still preventing the observer from viewing the doors, then the affected doors may be counted as not observed. If option (b) is used because of doors blocked by machines during charging operations, then, of the affected doors, exclude the door from the most recently charged oven from the inspection. Record the oven numbers and make an appropriate notation

under "Comments" on the door area inspection sheet (Figure 303-2).

4.2.3 When batteries have sheds to control emissions, conduct the inspection from outside the shed unless the doors cannot be adequately viewed. In this case, conduct the inspection from the bench. Be aware of special safety considerations pertinent to walking on the bench and follow the instructions of company personnel on the required equipment and operations procedures. If possible, conduct the bench traverse whenever the bench is clear of the door machine and hot coke guide.

4.3 Observations. Record all the information requested at the top of the door area inspection sheet (Figure 303-2), including the number of inoperable ovens. Record the clock time at the start of the traverse on each side of the battery. Record which side is being inspected, i.e., coke side or push side. Other information may be recorded at the discretion of the observer, such as the location of the leak (i.e., top of the door, chuck door, etc.), the reason for any interruption of the traverse, or the position of the sun relative to the battery and sky conditions (i.e., overcast, partly sunny, etc.).

4.3.1 Begin the test run by starting the stopwatch and traversing either the coke side or the push side of the battery. After completing one side, stop the watch. Complete this procedure on the other side. If inspecting more than one battery, the observer may view the push sides and the coke sides sequentially.

4.3.2 During the traverse, look around the entire perimeter of each oven door. The door is considered leaking if VE are detected in the coke oven door area. The coke oven door area includes the entire area on the vertical face of a coke oven between the bench and the top of the battery between two adjacent buck stays (e.g., the oven door, chuck door, between the masonry brick, buck stay or jamb, or other sources). Record the oven number and make the appropriate notation on the door area inspection sheet (Figure 303-2).

NOTE: Multiple VE from the same door area (e.g., VE from both the chuck door and the push side door) are counted as only one emitting door, not as multiple emitting doors.

4.3.3 Do not record the following sources as door area VE:

4.3.3.1 VE from ovens with doors removed. Record the oven number and make an appropriate notation under "Comments;"

4.3.3.2 VE from ovens taken out of service. The owner or operator shall notify the observer as to which ovens are out of service. Record the oven number and make an appropriate notation under "Comments;" or

4.3.3.3 VE from hot coke that has been spilled on the bench as a result of pushing.

4.4 Criteria for Acceptance. After completing the run, calculate the maximum time allowed to observe the ovens by the following equation:

$$T = (4 \times D_t) + (10 \times L) \quad (\text{Eq. 303-2})$$

where

T=Total time allowed for traverse, seconds;

D_t=Total number of oven doors on the battery; and

L=Number of doors with VE.

4.4.1 If the total traverse time exceeds T, void the run, and conduct another run to satisfy the requirements of §63.309(c)(1) of this part.

4.5 Calculations for Percent Leaking Doors (PLD). Determine the total number of doors for which observations were made on the coke oven battery as follows:

$$D_{ob} = (2 \times N) - (D_i + D_{no}) \quad (\text{Eq. 303-3})$$

where

D_{ob}=Total number of doors observed on operating ovens;

D_i=Number of doors on nonoperating ovens;

D_{no}=Number of doors not observed; and

N=Total number of ovens in the battery.

4.5.1 For each test run (one run includes both the coke side and the push side traverses), sum the number of doors with door area VE. For batteries subject to an approved alternative standard under §63.305 of this part, calculate the push side and the coke side PLD separately.

4.5.2 Calculate percent leaking doors by using the following equation:

$$PLD = \frac{L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303-4})$$

where

PLD=Percent leaking doors for the test run;

L_y=Number of doors with VE observed from the yard; and

D_{ob}=Total number of doors observed on operating ovens.

4.5.3 When traverses are conducted from the bench under sheds, calculate the coke side and the push side separately. Use the following equation to calculate a yard-equivalent reading:

$$L_b = L_s - (N \times 0.06) \quad (\text{Eq. 303-5})$$

where

N=Total number of ovens on the battery;

L_b=Yard-equivalent reading; and

L_s=Number of doors with VE observed from the bench under sheds.

If L_b is less than zero, use zero for L_b in Equation 303-6 in the calculation of PLD.

4.5.3.1 Use the following equation to calculate PLD:

$$PLD = \frac{L_b + L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303-6})$$

where

PLD=Percent leaking coke oven doors for the run;

L_b=Yard equivalent reading;

L_y=Number of doors with VE observed from the yard on the push side; and

D_{ob}=Total number of doors observed on operating ovens.

Round off PLD to the nearest hundredth of 1 percent and record as the percent leaking coke oven doors for the run.

4.5.3.2 30-day Rolling Average. For each day on which a valid observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLD(30\text{-day}) = \frac{(PLD_1 + PLD_2 + \dots + PLD_{30})}{30} \quad (\text{Eq. 303-7})$$

5. Procedure for Determining VE from Topside Port Lids and Offtake Systems

5.1 Number of Runs. Refer to §63.309(c)(1) of this part for the number of runs to be conducted. Simultaneous runs or separate runs for the topside port lids and offtake systems may be conducted.

5.2 Battery Traverse. To conduct a topside traverse of the battery, walk the length of the battery at a steady, normal walking pace, pausing only to make appropriate entries on the topside inspection sheet (Figure 303-3). The walking pace shall not exceed an

average rate of 4 seconds per oven, excluding time spent moving around stationary obstructions or waiting for other obstructions to move from positions blocking the view. Extra time is allowed for each leak for the observer to make the proper notation. A walking pace of 3 seconds per oven is typical. Record the actual traverse time with a stopwatch.

5.3 Topside Port Lid Observations. To observe lids of the ovens involved in the charging operation, the observer shall wait to view the lids until approximately 5 minutes

after the completion of the charge. Record all the information requested on the topside inspection sheet (Figure 303–3). Record the clock time when traverses begin and end. If the observer's view is obstructed during the traverse (e.g., steam from the coke wharf, larry car, etc.), follow the guidelines given in section 4.2.2.

5.3.1 To perform a test run, conduct a single traverse on the topside of the battery. The observer shall walk near the center of the battery but may deviate from this path to avoid safety hazards (such as open or closed charging ports, luting buckets, lid removal bars, and topside port lids that have been removed) and any other obstacles. Upon noting VE from the topside port lid(s) of an oven, record the oven number and port number, then resume the traverse. If any oven is dampered-off from the collecting main for decarbonization, note this under "Comments" for that particular oven.

NOTE: Count the number of topside ports, not the number of points, exhibiting VE, i.e., if a topside port has several points of VE, count this as one port exhibiting VE.

5.3.2 Do not count the following as topside port lid VE:

5.3.2.1 VE from between the brickwork and oven lid casing or VE from cracks in the oven brickwork. Note these VE under "Comments;"

5.3.2.2 VE from topside ports involved in a charging operation. Record the oven number, and make an appropriate notation (i.e., not observed because ports open for charging) under "Comments;"

5.3.2.3 Topside ports having maintenance work done. Record the oven number and make an appropriate notation under "Comments;" or

5.3.2.4 Condensing water from wet-sealing material. Ports with only visible condensing water from wet-sealing material are counted as observed but not as having VE.

5.3.2.5 Visible emissions from the flue inspection ports and caps.

5.4 Offtake Systems Observations. To perform a test run, traverse the battery as in

section 5.3.1. Look ahead and back two to four ovens to get a clear view of the entire offtake system for each oven. Consider visible emissions from the following points as offtake system VE: (a) the flange between the gooseneck and collecting main ("saddle"), (b) the junction point of the standpipe and oven ("standpipe base"), (c) the other parts of the offtake system (e.g., the standpipe cap), and (d) the junction points with ovens and flanges of jumper pipes.

5.4.1 Do not stray from the traverse line in order to get a "closer look" at any part of the offtake system unless it is to distinguish leaks from interferences from other sources or to avoid obstacles.

5.4.2 If the centerline does not provide a clear view of the entire offtake system for each oven (e.g., when standpipes are longer than 15 feet), the observer may conduct the traverse farther from (rather than closer to) the offtake systems.

5.4.3 Upon noting a leak from an offtake system during a traverse, record the oven number. Resume the traverse. If the oven is dampered-off from the collecting main for decarbonization and VE are observed, note this under "Comments" for that particular oven.

5.4.4 If any part or parts of an offtake system have VE, count it as one emitting offtake system. Each stationary jumper pipe is considered a single offtake system.

5.4.5 Do not count standpipe caps open for a decarbonization period or standpipes of an oven being charged as source of offtake system VE. Record the oven number and write "Not observed" and the reason (i.e., decarb or charging) under "Comments."

NOTE: VE from open standpipes of an oven being charged count as charging emissions. All VE from closed standpipe caps count as offtake leaks.

5.5 Criteria for Acceptance. After completing the run (allow 2 traverses for batteries with double mains), calculate the maximum time allowed to observe the topside port lids and/or offtake systems by the following equation:

$$T = (4 \text{ sec} \times N) + (10 \text{ sec} \times Z) \quad (\text{Eq. (303-8)})$$

where

T=Total time allowed for traverse, seconds;

N=Total number of ovens in the battery; and
Z=Number of topside port lids or offtake systems with VE.

5.5.1 If the total traverse time exceeds T, void the run and conduct another run to satisfy the requirements of §63.309(c)(1) of this part.

5.6 In determining the percent leaking topside port lids and percent leaking offtake systems, do not include topside port lids or offtake systems with VE from the following ovens:

5.6.1 Empty ovens, including ovens undergoing maintenance, which are properly dampered off from the main.

5.6.2 Ovens being charged or being pushed.

5.6.3 Up to 3 full ovens that have been dampered off from the main prior to pushing.

5.6.4 Up to 3 additional full ovens in the pushing sequence that have been dampered off from the main for offtake system cleaning, for decarbonization, for safety reasons, or when a charging/pushing schedule involves widely separated ovens (e.g., a Marquard system); or that have been dampered off from the main for maintenance near the end of the coking cycle. Examples

of reasons that ovens are dampered off for safety reasons are to avoid exposing workers in areas with insufficient clearance between standpipes and the larry car, or in areas where workers could be exposed to flames or hot gases from open standpipes, and to avoid the potential for removing a door on an oven that is not dampered off from the main.

5.6.5 Topside Port Lids. Determine the percent leaking topside port lids for each run as follows:

$$PLL = \frac{P_{VE}}{P_{ovn}(N - N_i) - P_{NO}} \times 100 \quad (\text{Eq. 303-9})$$

where

PLL=Percent leaking topside port lids for the run;

P_{VE} =Number of topside port lids with VE;

P_{ovn} =Number of ports per oven;

N =Total number of ovens in the battery;

N_i =Number of inoperable ovens; and

P_{NO} =Number of ports not observed.

5.6.5.1 Round off this percentage to the nearest hundredth of 1 percent and record

this percentage as the percent leaking topside port lids for the run.

5.6.5.2 30-day Rolling Average. For each day on which a valid daily observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLL(30\text{-day}) = \frac{(PLL_1 + PLL_2 + K + PLL_{30})}{30} \quad (\text{Eq. 303-10})$$

5.6.6 Offtake Systems. Determine the percent leaking offtake systems for the run as follows:

where

$$PLO = \frac{T_{VE}}{T_{ovn}(N - N_i) + J - T_{NO}} \times 100 \quad (\text{Eq. 303-11})$$

PLO=Percent leaking offtake systems;

T_{VE} =Number of offtake systems with VE;

T_{ovn} =Number of offtake systems (excluding jumper pipes) per oven;

N =Total number of ovens in the battery;

N_i =Total number of inoperable ovens;

T_{NO} =Number of offtake systems not observed; and

J =Number of stationary jumper pipes.

5.6.6.1 Round off this percentage to the nearest hundredth of 1 percent and record this percentage as the percent leaking offtake systems for the run.

5.6.6.2 30-day Rolling Average. For each day on which a valid daily observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLO(30\text{-day}) = \frac{(PLO_1 + PLO_2 K + PLO_{30})}{30} \quad (\text{Eq. 303-12})$$

6. *Procedure for Determining VE From Collecting Mains*

6.1 *Traverse.* To perform a test run, traverse both the collecting main catwalk and the battery topside along the side closest to the collecting main. If the battery has a double main, conduct two sets of traverses for each run, i.e., one set for each main.

6.2 *Data Recording.* Upon noting VE from any portion of a collection main, identify the source and approximate location of the source of VE and record the time under “Collecting main” on Figure 303-3; then resume the traverse.

6.3 *Collecting Main Pressure Check.* After the completion of the door traverse, the topside port lids, and offtake systems, compare the collecting main pressure during the inspection to the collecting main pressure during the previous 8 to 24 hours. Record the following: (a) The pressure during inspection, (b) presence of pressure deviation from normal operations, and (c) the explanation for any pressure deviation from normal operations, if any, offered by the operators. The owner or operator of the coke battery shall maintain the pressure recording equipment and conduct the quality assurance/quality control (QA/QC) necessary to ensure reliable pressure readings and shall keep the QA/QC records for at least 6 months. The observer

may periodically check the QA/QC records to determine their completeness. The owner or operator shall provide access to the records within 1 hour of an observer’s request.

7. *Bibliography*

1. Missan, R., and A. Stein. Guidelines for Evaluation of Visible Emissions Certification, Field Procedures, Legal Aspects, and Background Material. U.S. Environmental Protection Agency. EPA Publication No. EPA-340/1-75-007. April 1975.

2. Wohlschlegel, P., and D.E. Wagoner. Guideline for Development of a Quality Assurance Program: Volume IX—Visual Determination of Opacity Emission from Stationary Sources. U.S. Environmental Protection Agency. EPA Publication No. EPA-650/4-005i. November 1975.

3. U.S. Occupational Safety and Health Administration. Code of Federal Regulations. Title 29, chapter XVII, §1910.1029(g). Washington, DC Government Printing Office. July 1, 1990.

4. U.S. Environmental Protection Agency. National Emission Standards for Hazardous Air Pollutants; Coke Oven Emissions from Wet-Coal Charged By-Product Coke Oven Batteries; Proposed Rule and Notice of Public Hearing. Washington, DC FEDERAL REGISTER. Vol. 52, No. 78 (13586). April 23, 1987.

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[illegible]

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Company name: _____ Battery no.: _____ Date: _____
City, State: _____ Total no. of ovens in battery: _____
Observer name: _____ Certification expiration date: _____
Inoperable ovens: _____ Company representative(s): _____
Traverse time CS: _____ Traverse time PS: _____ Valid run (Y or N): _____

[illegible]

Figure 303-2. Door area inspection.

[illegible]

METHOD 303A—DETERMINATION OF VISIBLE EMISSIONS FROM NONRECOVERY COKE OVEN BATTERIES

1.1 Applicability. This method determines percent leaking doors.

1.2 Principle. A certified observer visually determines the VE from coke oven battery sources. This method does not require that opacity of emissions be determined or that magnitude be differentiated.

1.3 Definitions.

1.3.1 Bench. The platform structure in front of the oven doors.

1.3.2 Nonrecovery Coke Oven Battery. A source consisting of a group of ovens connected by common walls and operated as a unit, where coal undergoes destructive distillation under negative pressure to produce coke, and which is designed for the combustion of coke oven gas from which by-products are not recovered.

1.3.3 Coke Oven Door. Each end enclosure on the pusher side and the coking side of an oven.

1.3.4 Coke Side. The side of a battery from which the coke is discharged from ovens at the end of the coking cycle.

1.3.5 Operating Oven. Any oven not out of operation for rebuild or maintenance work

extensive enough to require the oven to be skipped in the charging sequence.

1.3.6 Oven. A chamber in the coke oven battery in which coal undergoes destructive distillation to produce coke.

1.3.7 Push Side. The side of the battery from which the coke is pushed from ovens at the end of the coking cycle.

1.3.8 Run. The observation of visible emissions from coke oven doors in accordance with the procedures in this method.

1.3.9 Shed. An enclosure that covers the side of the coke oven battery, captures emissions from pushing operations and from leaking coke oven doors on the coke side or pusher side of the coke oven battery, and routes the emissions to a control device or system.

2. Training

2.1 Training. This method requires only the determination of whether VE occur and does not require the determination of opacity levels; therefore, observer certification according to Method 9 in appendix A to part 60 of this chapter is not required. However, the first-time observer (trainee) shall have attended the lecture portion of the Method 9 certification course. Furthermore, before conducting any VE observations, an observer shall become familiar with nonrecovery coke oven battery operations and with this test method by observing for a minimum of 4 hours the operation of a nonrecovery coke oven battery.

3. Procedure for Determining VE From Coke Oven Door Areas

The intent of this procedure is to determine VE from coke oven door areas by carefully observing the door area while walking at a normal pace.

3.1 Number of Runs. Refer to §63.309(c)(1) of this part for the appropriate number of runs.

3.2 Battery Traverse. To conduct a battery traverse, walk the length of the battery on the outside of the pusher machine and quench car tracks at a steady, normal walking pace, pausing to make appropriate entries on the door area inspection sheet (Figure 303A-1). A single test run consists of two timed traverses, one for the coke side and one for the push side.

3.2.1 Various situations may arise that will prevent the observer from viewing a door or a series of doors. The observer has two options for dealing with obstructions to view: (a) Wait for the equipment to move or the fugitive emissions to dissipate before completing the traverse; or (b) skip the affected ovens and move to a position to continue the traverse. Continue the traverse. After the completion of the traverse, if the equipment has moved or the fugitive emissions have dissipated, complete the traverse by inspecting the affected doors. Record the

oven numbers and make an appropriate notation under "Comments" on the door area inspection sheet (Figure 303A-1).

3.2.2 When batteries have sheds to control pushing emissions, conduct the inspection from outside the shed, if the shed allows such observations, or from the bench. Be aware of special safety considerations pertinent to walking on the bench and follow the instructions of company personnel on the required equipment and operations procedures. If possible, conduct the bench traverse whenever the bench is clear of the door machine and hot coke guide.

3.3 Observations. Record all the information requested at the top of the door area inspection sheet (Figure 303A-1), including the number of inoperable ovens. Record which side is being inspected, i.e., coke side or push side. Other information may be recorded at the discretion of the observer, such as the location of the leak (e.g., top of the door), the reason for any interruption of the traverse, or the position of the sun relative to the battery and sky conditions (i.e., overcast, partly sunny, etc.).

3.3.1 Begin the test run by traversing either the coke side or the push side of the battery. After completing one side, traverse the other side.

3.3.2 During the traverse, look around the entire perimeter of each oven door. The door is considered leaking if VE are detected in the coke oven door area. The coke oven door area includes the entire area on the vertical face of a coke oven between the bench and the top of the battery. Record the oven number and make the appropriate notation on the door area inspection sheet (Figure 303A-1).

3.3.3 Do not record the following sources as door area VE:

3.3.3.1 VE from ovens with doors removed. Record the oven number and make an appropriate notation under "Comments;"

3.3.3.2 VE from ovens where maintenance work is being conducted. Record the oven number and make an appropriate notation under "Comments;" or

3.3.3.3 VE from hot coke that has been spilled on the bench as a result of pushing.

3.4 Calculations for percent leaking doors (PLD). Determine the total number of doors for which observations were made on the coke oven battery as follows:

$$D_{ob} = (2 \times N) - (D_i + D_{no}) \text{ (Eq. 303A-1)}$$

where

D_{ob} = Total number of doors observed on operating ovens;

D_i = Number of doors on nonoperating ovens;

D_{no} = Number of doors not observed; and

N = Total number of ovens in the battery.

3.4.1 For each test run (one run includes both the coke side and the push side traverses), sum the number of doors with door area VE.

NOTE: Multiple VE from the same door area are counted as only one emitting door, not as multiple emitting doors.

3.4.2 Calculate percent leaking doors by using the following equation:

$$PLD = \frac{L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303A-2})$$

where

PLD=Percent leaking doors for the test run;
 L_y =Number of doors with VE observed from the yard; and

D_{ob} =Total number of doors observed on operating ovens.

3.4.3 When traverses are conducted from the bench under sheds, calculate the coke side and the push side reading separately. Use the following equation to calculate a yard-equivalent reading for the coke side:

$$L_b = L_s - (N \times 0.06) \quad (\text{Eq. 303A-3})$$

where

N =Total number of ovens on the battery;

L_b =Yard-equivalent reading; and

L_s =Number of doors with VE observed from the bench under sheds.

If L_b is less than zero, use zero for L_b in Equation 303A-4 in the calculation of PLD.

3.4.3.1 Use the following equation to calculate PLD:

$$PLD = \frac{L_b + L_y}{D_{ob}} \times 100 \quad (\text{Eq. 303A-4})$$

where

PLD=Percent leaking coke oven doors for the run;

L_b =Yard equivalent reading;

L_y =Number of doors with VE observed from the yard on the push side; and

D_{ob} =Total number of doors observed on operating ovens.

Round off PLD to the nearest hundredth of 1 percent and record as the percent leaking coke oven doors for the run.

3.4.3.2 30-day Rolling Average. For each day on which a valid observation is obtained, calculate the daily 30-day rolling average for each battery using these data and the 29 previous valid daily observations, in accordance with the following equation:

$$PLD(30\text{-day}) = \frac{(PLD_1 + PLD_2 L + PLD_{30})}{30} \quad (\text{Eq. 303-5})$$

4. Bibliography

1. Missan, R., and A. Stein. Guidelines for Evaluation of Visible Emissions Certification, Field Procedures, Legal Aspects, and Background Material. U.S. Environmental Protection Agency. EPA Publication No. EPA-340/1-75-007. April 1975.

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Company name: _____ Battery no.: _____ Date: _____
City, State: _____ Total no. of ovens in battery: _____
Observer name: _____ Certification expiration date: _____
Inoperable ovens: _____ Company representative(s): _____
Traverse time CS: _____ Traverse time PS: _____ Valid run (Y or N): _____

[illegible]

Figure 303A-1. Door area inspection.

METHOD 304A: DETERMINATION OF BIO-
DEGRADATION RATES OF ORGANIC COM-
POUNDS (VENT OPTION)

1. Applicability and Principle

1.1 *Applicability.* This method is applicable for the determination of biodegradation rates of organic compounds in an activated sludge process. The test method is designed to evaluate the ability of an aerobic biological reaction system to degrade or destroy specific components in waste streams. The method may also be used to determine the effects of changes in wastewater composition on operation. The biodegradation rates determined by utilizing this method are not representative of a full-scale system. The rates measured by this method shall be used in conjunction with the procedures listed in appendix C of this part to calculate the frac-

tion emitted to the air versus the fraction biodegraded.

1.2 Principle. A self-contained benchtop bioreactor system is assembled in the laboratory. A sample of mixed liquor is added and the waste stream is then fed continuously. The benchtop bioreactor is operated under conditions nearly identical to the target full-scale activated sludge process. Bioreactor temperature, dissolved oxygen concentration, average residence time in the reactor, waste composition, biomass concentration, and biomass composition of the full-scale process are the parameters which are duplicated in the benchtop bioreactor. Biomass shall be removed from the target full-scale activated sludge unit and held for no more than 4 hours prior to use in the benchtop bioreactor. If antifoaming agents are used in the full-scale system, they shall

also be used in the benchtop bioreactor. The feed flowing into and the effluent exiting the benchtop bioreactor are analyzed to determine the biodegradation rates of the target compounds. The flow rate of the exit vent is used to calculate the concentration of target compounds (utilizing Henry's law) in the exit gas stream. If Henry's law constants for the compounds of interest are not known, this method cannot be used in the determination of the biodegradation rate and Method 304B is the suggested method. The choice of analytical methodology for measuring the compounds of interest at the inlet and outlet to the benchtop bioreactor are left to the discretion of the source, except where validated methods are available.

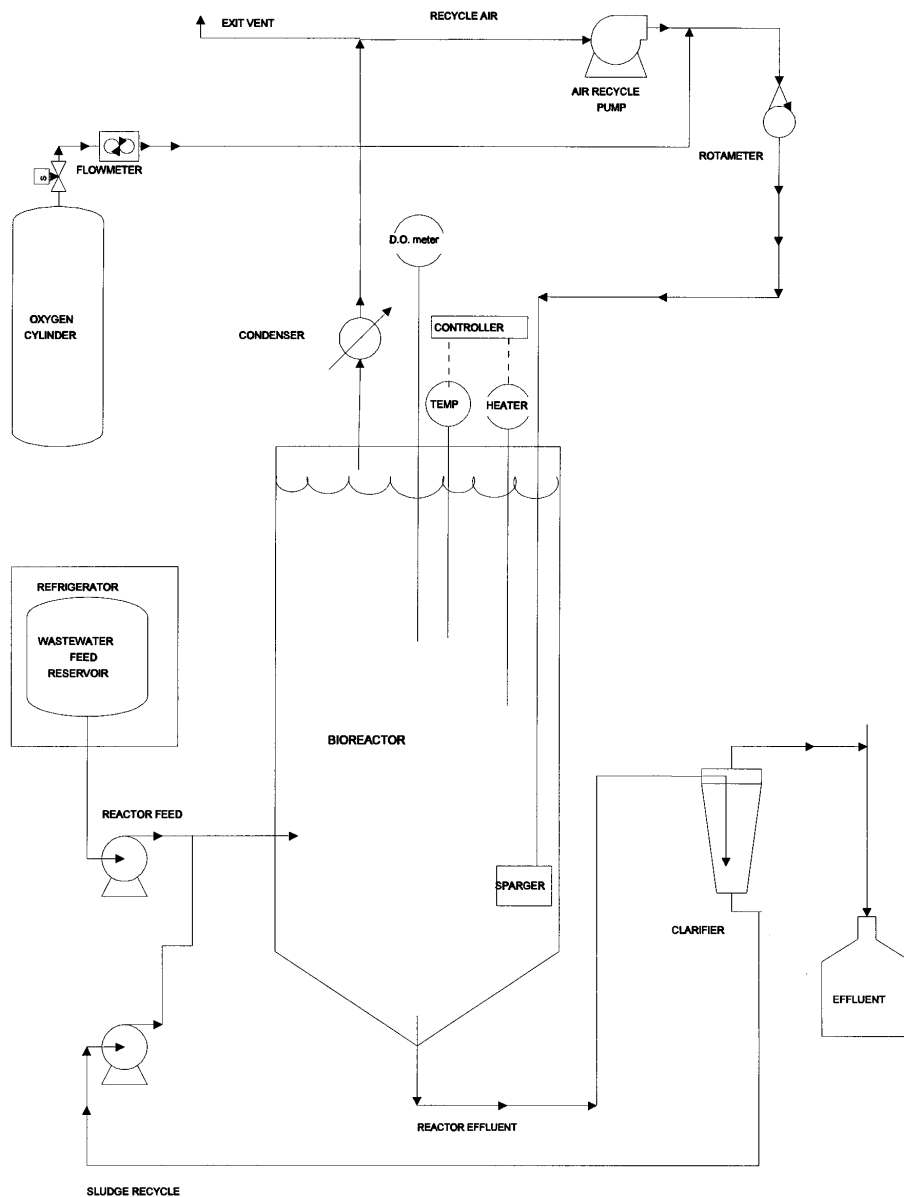
2. Apparatus

Figure 1 illustrates a typical laboratory apparatus used to measure biodegradation

rates. While the following description refers to Figure 1, the EPA recognizes that alternative reactor configurations, such as alternative reactor shapes and locations of probes and the feed inlet, will also meet the intent of this method. Ensure that the benchtop bioreactor system is self-contained and isolated from the atmosphere (except for the exit vent stream) by leak-checking fittings, tubing, etc.

2.1 Laboratory apparatus.

2.1.1 *Benchtop Bioreactor.* The biological reaction is conducted in a biological oxidation reactor of at least 6 liters capacity. The benchtop bioreactor is sealed and equipped with internal probes for controlling and monitoring dissolved oxygen and internal temperature. The top of the reactor is equipped for aerators, gas flow ports, and instrumentation (while ensuring that no leaks to the atmosphere exist around the fittings).



EPA METHOD 304A VENT BIOREACTOR SYSTEM

2.1.2 *Aeration gas.* Aeration gas is added to the benchtop bioreactor through three diffusers, which are glass tubes that extend to the bottom fifth of the reactor depth. A pure

oxygen pressurized cylinder is recommended in order to maintain the specified oxygen concentration. Install a blower (e.g., Diaphragm Type, 15 SCFH capacity) to blow the

aeration gas into the reactor diffusers. Measure the aeration gas flow rate with a rotameter (e.g., 0–15 SCFH recommended). The aeration gas will rise through the benchtop bioreactor, dissolving oxygen into the mixture in the process. The aeration gas must provide sufficient agitation to keep the solids in suspension. Provide an exit for the aeration gas from the top flange of the benchtop bioreactor through a water-cooled (e.g., Allihn-type) vertical condenser. Install the condenser through a gas-tight fitting in the benchtop bioreactor closure. Install a splitter which directs a portion of the gas to an exit vent and the rest of the gas through an air recycle pump back to the benchtop bioreactor. Monitor and record the flow rate through the exit vent at least 3 times per day throughout the day.

2.1.3 Wastewater Feed. Supply the wastewater feed to the benchtop bioreactor in a collapsible low-density polyethylene container or collapsible liner in a container (e.g., 20 L) equipped with a spigot cap (collapsible containers or liners of other material may be required due to the permeability of some volatile compounds through polyethylene). Obtain the wastewater feed by sampling the wastewater feed in the target process. A representative sample of wastewater shall be obtained from the piping leading to the aeration tank. This sample may be obtained from existing sampling valves at the discharge of the wastewater feed pump, or collected from a pipe discharging to the aeration tank, or by pumping from a well-mixed equalization tank upstream from the aeration tank. Alternatively, wastewater can be pumped continuously to the laboratory apparatus from a bleed stream taken from the equalization tank of the full-scale treatment system.

2.1.3.1 Refrigeration System. Keep the wastewater feed cool by ice or by refrigeration to 4 °C. If using a bleed stream from the equalization tank, refrigeration is not required if the residence time in the bleed stream is less than five minutes.

2.1.3.2 Wastewater Feed Pump. The wastewater is pumped from the refrigerated container using a variable-speed peristaltic pump drive equipped with a peristaltic pump head. Add the feed solution to the benchtop bioreactor through a fitting on the top flange. Determine the rate of feed addition to provide a retention time in the benchtop bioreactor that is numerically equivalent to the retention time in the full-scale system. The wastewater shall be fed at a rate sufficient to achieve 90 to 100 percent of the full-scale system residence time.

2.1.3.3 Treated wastewater feed. The benchtop bioreactor effluent exits at the bottom of the reactor through a tube and proceeds to the clarifier.

2.1.4 Clarifier. The effluent flows to a separate closed clarifier that allows separation of

biomass and effluent (e.g., 2-liter pear-shaped glass separatory funnel, modified by removing the stopcock and adding a 25-mm OD glass tube at the bottom). Benchtop bioreactor effluent enters the clarifier through a tube inserted to a depth of 0.08 m (3 in.) through a stopper at the top of the clarifier. System effluent flows from a tube inserted through the stopper at the top of the clarifier to a drain (or sample bottle when sampling). The underflow from the clarifier leaves from the glass tube at the bottom of the clarifier. Flexible tubing connects this fitting to the sludge recycle pump. This pump is coupled to a variable speed pump drive. The discharge from this pump is returned through a tube inserted in a port on the side of the benchtop bioreactor. An additional port is provided near the bottom of the benchtop bioreactor for sampling the reactor contents. The mixed liquor from the benchtop bioreactor flows into the center of the clarifier. The clarified system effluent separates from the biomass and flows through an exit near the top of the clarifier. There shall be no headspace in the clarifier.

2.1.5 Temperature Control Apparatus. Capable of maintaining the system at a temperature equal to the temperature of the full-scale system. The average temperature should be maintained within ± 2 °C of the set point.

2.1.5.1 Temperature Monitoring Device. A resistance type temperature probe or a thermocouple connected to a temperature readout with a resolution of 0.1 °C or better.

2.1.5.2 Benchtop Bioreactor Heater. The heater is connected to the temperature control device.

2.1.6 Oxygen Control System. Maintain the dissolved oxygen concentration at the levels present in the full-scale system. Target full-scale activated sludge systems with dissolved oxygen concentration below 2 mg/L are required to maintain the dissolved oxygen concentration in the benchtop bioreactor within 0.5 mg/L of the target dissolved oxygen level. Target full-scale activated sludge systems with dissolved oxygen concentration above 2 mg/L are required to maintain the dissolved oxygen concentration in the benchtop bioreactor within 1.5 mg/L of the target dissolved oxygen concentration; however, for target full-scale activated sludge systems with dissolved oxygen concentrations above 2 mg/L, the dissolved oxygen concentration in the benchtop bioreactor may not drop below 1.5 mg/L. If the benchtop bioreactor is outside the control range, the dissolved oxygen is noted and the reactor operation is adjusted.

2.1.6.1 Dissolved Oxygen Monitor. Dissolved oxygen is monitored with a polarographic probe (gas permeable membrane) connected to a dissolved oxygen meter (e.g., 0 to 15 mg/L, 0 to 50 °C).

2.1.6.2 *Benchtop bioreactor Pressure Monitor.* The benchtop bioreactor pressure is monitored through a port in the top flange of the reactor. This is connected to a gauge control with a span of 13-cm water vacuum to 13-cm water pressure or better. A relay is activated when the vacuum exceeds an adjustable setpoint which opens a solenoid valve (normally closed), admitting oxygen to the system. The vacuum setpoint controlling oxygen addition to the system shall be set at approximately 2.5 ± 0.5 cm water and maintained at this setting except during brief periods when the dissolved oxygen concentration is adjusted.

2.1.7 *Connecting Tubing.* All connecting tubing shall be Teflon or equivalent in impermeability. The only exception to this specification is the tubing directly inside the pump head of the wastewater feed pump, which may be Viton, Silicone or another type of flexible tubing. Note: Mention of trade names or products does not constitute endorsement by the U.S. Environmental Protection Agency.

2.2 *Analysis.* If the identity of the compounds of interest in the wastewater is not known, a representative sample of the wastewater shall be analyzed in order to identify all of the compounds of interest present. A gas chromatography/mass spectrometry screening method is recommended.

2.2.1 After identifying the compounds of interest in the wastewater, develop and/or use one or more analytical techniques capable of measuring each of those compounds (more than one analytical technique may be required, depending on the characteristics of the wastewater). Test Method 18, found in appendix A of 40 CFR part 60, may be used as a guideline in developing the analytical technique. Purge and trap techniques may be used for analysis providing the target components are sufficiently volatile to make this technique appropriate. The limit of quantitation for each compound shall be determined.¹ If the effluent concentration of any target compound is below the limit of quantitation determined for that compound, the operation of the Method 304 unit may be altered to attempt to increase the effluent concentration above the limit of quantitation. Modifications to the method shall be approved prior to the test. The request should be addressed to Method 304 contact, Emissions Measurement Center, Mail Drop 19, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

2.2.2 *Calibration Standards.* Prepare calibration standards from pure certified standards in an aqueous medium. Prepare and analyze three concentrations of calibration standards for each target component (or for a mixture of components) in triplicate daily throughout the analyses of the test samples. At each concentration level, a single calibration shall be within 5 percent of the average

of the three calibration results. The low and medium calibration standards shall bracket the expected concentration of the effluent (treated) wastewater. The medium and high standards shall bracket the expected influent concentration.

3. Reagents

3.1 *Wastewater.* Obtain a representative sample of wastewater at the inlet to the full-scale treatment plant if there is an existing full-scale treatment plant (see section 2.1.3). If there is no existing full-scale treatment plant, obtain the wastewater sample as close to the point of determination as possible. Collect the sample by pumping the wastewater into the 20-L collapsible container. The loss of volatiles shall be minimized from the wastewater by collapsing the container before filling, by minimizing the time of filling, and by avoiding a headspace in the container after filling. If the wastewater requires the addition of nutrients to support the biomass growth and maintain biomass characteristics, those nutrients are added and mixed with the container contents after the container is filled.

3.2 *Biomass.* Obtain the biomass or activated sludge used for rate constant determination in the bench-scale process from the existing full-scale process or from a representative biomass culture (e.g., biomass that has been developed for a future full-scale process). This biomass is preferentially obtained from a thickened acclimated mixed liquor sample. Collect the sample either by bailing from the mixed liquor in the aeration tank with a weighted container, or by collecting aeration tank effluent at the effluent overflow weir. Transport the sample to the laboratory within no more than 4 hours of collection. Maintain the biomass concentration in the benchtop bioreactor at the level of the full-scale system ± 10 percent throughout the sampling period of the test method.

4. *Procedure.* Safety Note: If explosive gases are produced as a byproduct of biodegradation and could realistically pose a hazard, closely monitor headspace concentration of these gases to ensure laboratory safety. Placement of the benchtop bioreactor system inside a laboratory hood is recommended regardless of byproducts produced.

4.1 *Benchtop Bioreactor Operation.* Charge the mixed liquor to the benchtop bioreactor, minimizing headspace over the liquid surface to minimize entrainment of mixed liquor in the circulating gas. Fasten the benchtop bioreactor headplate to the reactor over the liquid surface. Maintain the temperature of the contents of the benchtop bioreactor system at the temperature of the target full-scale system, ± 2 °C, throughout the testing period. Monitor and record the temperature of the benchtop bioreactor contents at least to the nearest 0.1 °C.

4.1.1 *Wastewater Storage.* Collect the wastewater sample in the 20-L collapsible container. Store the container at 4 °C throughout the testing period. Connect the container to the benchtop bioreactor feed pump.

4.1.2 *Wastewater Flow Rate.* The hydraulic residence time of the aeration tank is calculated as the ratio of the volume of the tank (L) to the flow rate (L/min). At the beginning of a test, the container shall be connected to the feed pump and solution shall be pumped to the benchtop bioreactor at the required flow rate to achieve the calculated hydraulic residence time of wastewater in the aeration tank.

$$Q_{\text{test}} = Q_{\text{fs}} \frac{L}{V_{\text{fs}}} \quad \text{Eqn 304A-1}$$

Where:

Q_{test} =wastewater flow rate (L/min)

Q_{fs} =average flow rate of full-scale process (L/min)

V_{fs} =volume of full-scale aeration tank (L)

The target flow rate in the test apparatus is the same as the flow rate in the target full-scale process multiplied by the ratio of benchtop bioreactor volume (e.g., 6 L) to the volume of the full-scale aeration tank. The hydraulic residence time shall be maintained at 90 to 100 percent of the residence time maintained in the full-scale unit. A nominal flow rate is set on the pump based on a pump calibration. Changes in the elasticity of the tubing in the pump head and the accumulation of material in the tubing affect this calibration. The nominal pumping rate shall be changed as necessary based on volumetric flow measurements. Discharge the benchtop bioreactor effluent to a wastewater storage, treatment, or disposal facility, except during sampling or flow measurement periods.

4.1.3 *Sludge Recycle Rate.* Set the sludge recycle rate at a rate sufficient to prevent accumulation in the bottom of the clarifier. Set the air circulation rate sufficient to maintain the biomass in suspension.

4.1.4 *Benchtop Bioreactor Operation and Maintenance.* Temperature, dissolved oxygen concentration, exit vent flow rate, benchtop bioreactor effluent flow rate, and air circulation rate shall be measured and recorded three times throughout each day of benchtop bioreactor operation. If other parameters (such as pH) are measured and maintained in the target full-scale unit, these parameters, where appropriate, shall be monitored and maintained to target full-scale specifications in the benchtop bioreactor. At the beginning of each sampling period (section 4.2), sample the benchtop bioreactor contents for suspended solids analysis. Take this sample by loosening a clamp on a length of tubing attached to the lower side port. Determine the suspended solids gravimetrically by the

Gooch crucible/glass fiber filter method for total suspended solids, in accordance with Standard Methods³ or equivalent. When necessary, sludge shall be wasted from the lower side port of the benchtop bioreactor, and the volume that is wasted shall be replaced with an equal volume of the reactor effluent. Add thickened activated sludge mixed liquor as necessary to the benchtop bioreactor to increase the suspended solids concentration to the desired level. Pump this mixed liquor to the benchtop bioreactor through the upper side port (Item 24 in Figure 1). Change the membrane on the dissolved oxygen probe before starting the test. Calibrate the oxygen probe immediately before the start of the test and each time the membrane is changed.

4.1.5 *Inspection and Correction Procedures.* If the feed line tubing becomes clogged, replace with new tubing. If the feed flow rate is not within 5 percent of target flow any time the flow rate is measured, reset pump or check the flow measuring device and measure flow rate again until target flow rate is achieved.

4.2 *Test Sampling.* At least two and one half hydraulic residence times after the system has reached the targeted specifications shall be permitted to elapse before the first sample is taken. Effluent samples of the clarifier discharge (Item 20 in Figure 1) and the influent wastewater feed are collected in 40-mL septum vials to which two drops of 1:10 hydrochloric acid (HCl) in water have been added. Sample the clarifier discharge directly from the drain line. These samples will be composed of the entire flow from the system for a period of several minutes. Feed samples shall be taken from the feed pump suction line after temporarily stopping the benchtop bioreactor feed, removing a connector, and squeezing the collapsible feed container. Store both influent and effluent samples at 4 °C immediately after collection and analyze within 8 hours of collection.

4.2.1 *Frequency of Sampling.* During the test, sample and analyze the wastewater feed and the clarifier effluent at least six times. The sampling intervals shall be separated by at least 8 hours. During any individual sampling interval, sample the wastewater feed simultaneously with or immediately after the effluent sample. Calculate the relative standard deviation (RSD) of the amount removed (i.e., effluent concentration—wastewater feed concentration). The RSD values shall be < 15 percent. If an RSD value is > 15 percent, continue sampling and analyzing influent and effluent sets of samples until the RSD values are within specifications.

4.2.2 *Sampling After Exposure of System to Atmosphere.* If, after starting sampling procedures, the benchtop bioreactor system is exposed to the atmosphere (due to leaks, maintenance, etc.), allow at least one hydraulic residence time to elapse before resuming sampling.

5. Operational Checks and Calibration

5.1 *Dissolved Oxygen.* Fluctuation in dissolved oxygen concentration may occur for numerous reasons, including undetected gas leaks, increases and decreases in mixed liquor suspended solids resulting from cell growth and solids loss in the effluent stream, changes in diffuser performance, cycling of effluent flow rate, and overcorrection due to faulty or sluggish dissolved oxygen probe response. Control the dissolved oxygen concentration in the benchtop bioreactor by changing the proportion of oxygen in the circulating aeration gas. Should the dissolved oxygen concentration drift below the designated experimental condition, bleed a small amount of aeration gas from the system on the pressure side (i. e., immediately upstream of one of the diffusers). This will create a vacuum in the system, triggering the pressure sensitive relay to open the solenoid valve and admit oxygen to the system. Should the dissolved oxygen concentration drift above the designated experimental condition, slow or stop the oxygen input to the system until the dissolved oxygen concentration approaches the correct level.

5.2 *Sludge Wasting.* Determine the suspended solids concentration (section 4.1.4) at the beginning of a test, and once per day thereafter during the test. If the test is completed within a two day period, determine the suspended solids concentration after the final sample set is taken. If the suspended solids concentration exceeds the specified concentration, remove a fraction of the sludge from the benchtop bioreactor. The required volume of mixed liquor to remove is determined as follows:

$$V_w = V_r \left(\frac{S_m - S_s}{S_m} \right) \quad \text{Eqn 304A-2}$$

Where:

V_w is the wasted volume (Liters),

V_r is the volume of the benchtop bioreactor (Liters),

S_m is the measured solids (g/L), and

S_s is the specified solids (g/L).

Remove the mixed liquor from the benchtop bioreactor by loosening a clamp on the mixed liquor sampling tube and allowing the required volume to drain to a graduated flask. Clamp the tube when the correct volume has been wasted. Replace the volume of the liquid wasted by pouring the same volume of effluent back into the benchtop bioreactor.

Dispose of the waste sludge properly.

5.3 *Sludge Makeup.* In the event that the suspended solids concentration is lower than the specifications, add makeup sludge back into the benchtop bioreactor. Determine the amount of sludge added by the following equation:

$$V_w = V_r \left(\frac{S_s - S_m}{S_w} \right) \quad \text{Eqn 304A-3}$$

Where:

V_w is the volume of sludge to add (Liters),

V_r is the volume of the benchtop bioreactor (Liters),

S_w is the solids in the makeup sludge (g/L),

S_m is the measured solids (g/L), and

S_s is the specified solids (g/L).

5.4 *Wastewater Pump Calibration.* Determine the wastewater flow rate by collecting the system effluent for a time period of at least one hour, and measuring the volume with a graduated cylinder. Record the collection time period and volume collected. Determine flow rate. Adjust the pump speed to deliver the specified flow rate.

6. Calculations

6.1 *Nomenclature.* The following symbols are used in the calculations.

C_i =Average inlet feed concentration for a compound of interest, as analyzed (mg/L)

C_o =Average outlet (effluent) concentration for a compound of interest, as analyzed (mg/L)

X =Biomass concentration, mixed liquor suspended solids (g/L)

t =Hydraulic residence time in the benchtop bioreactor (hours)

V =Volume of the benchtop bioreactor (L)

Q =Flow rate of wastewater into the benchtop bioreactor, average (L/hour)

6.2 *Residence Time.* The hydraulic residence time of the benchtop bioreactor is equal to the ratio of the volume of the benchtop bioreactor (L) to the flow rate (L/h)

$$t = \frac{V}{Q} \quad \text{Eqn 304A-4}$$

6.3 *Rate of Biodegradation.* Calculate the rate of biodegradation for each component with the following equation:

$$\text{Rate} \left(\frac{\text{mg}}{\text{L-h}} \right) = \frac{C_i - C_o}{t} \quad \text{Eqn 304A-5}$$

6.4 *First-Order Biorate Constant*. Calculate the first-order biorate constant (K1) for each component with the following equation:

$$K1 \left(\frac{L}{g-h} \right) = \frac{C_i - C_o}{t C_o X} \quad \text{Eqn 304A-6}$$

6.5 *Relative Standard Deviation (RSD)*. Determine the standard deviation of both the influent and effluent sample concentrations (S) using the following equation:

$$RSD = \frac{100}{\bar{S}} \left(\frac{\sum_{i=1}^n (S_i - \bar{S})^2}{(n-1)} \right)^{1/2} \quad \text{Eqn 304A-7}$$

6.6 *Determination of Percent Air Emissions and Percent Biodegraded*. Use the results from this test method and follow the applicable procedures in appendix C of 40 CFR part 63, entitled, "Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit" to determine F_{bio} .

7. Bibliography

1. "Guidelines for data acquisition and data quality evaluation in Environmental Chemistry", Daniel MacDoughal, Analytical Chemistry, Volume 52, p. 2242, 1980.
2. Test Method 18, 40 CFR part 60, appendix A.
3. Standard Methods for the Examination of Water and Wastewater, 16th Edition, Method 209C, Total Suspended Solids Dried at 103-105 °C, APHA, 1985.
4. Water7, Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)—Air Emission Models, U.S. Environmental Protection Agency, EPA-450/3-87-026, Review Draft, November 1989.
5. Chemdat7, Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)—Air Emission Models, U.S. Environmental Protection Agency, EPA-450/3-87-026, Review Draft, November 1989.

METHOD 304B: DETERMINATION OF BIODEGRADATION RATES OF ORGANIC COMPOUNDS (SCRUBBER OPTION)

1. Applicability and Principle

1.1 *Applicability*. This method is applicable for the determination of biodegradation rates of organic compounds in an activated sludge process. The test method is designed to evaluate the ability of an aerobic biological reaction system to degrade or destroy specific components in waste streams. The method may also be used to determine the effects of changes in wastewater composition on operation. The biodegradation rates determined by utilizing this method are not representative of a full-scale system. Full-

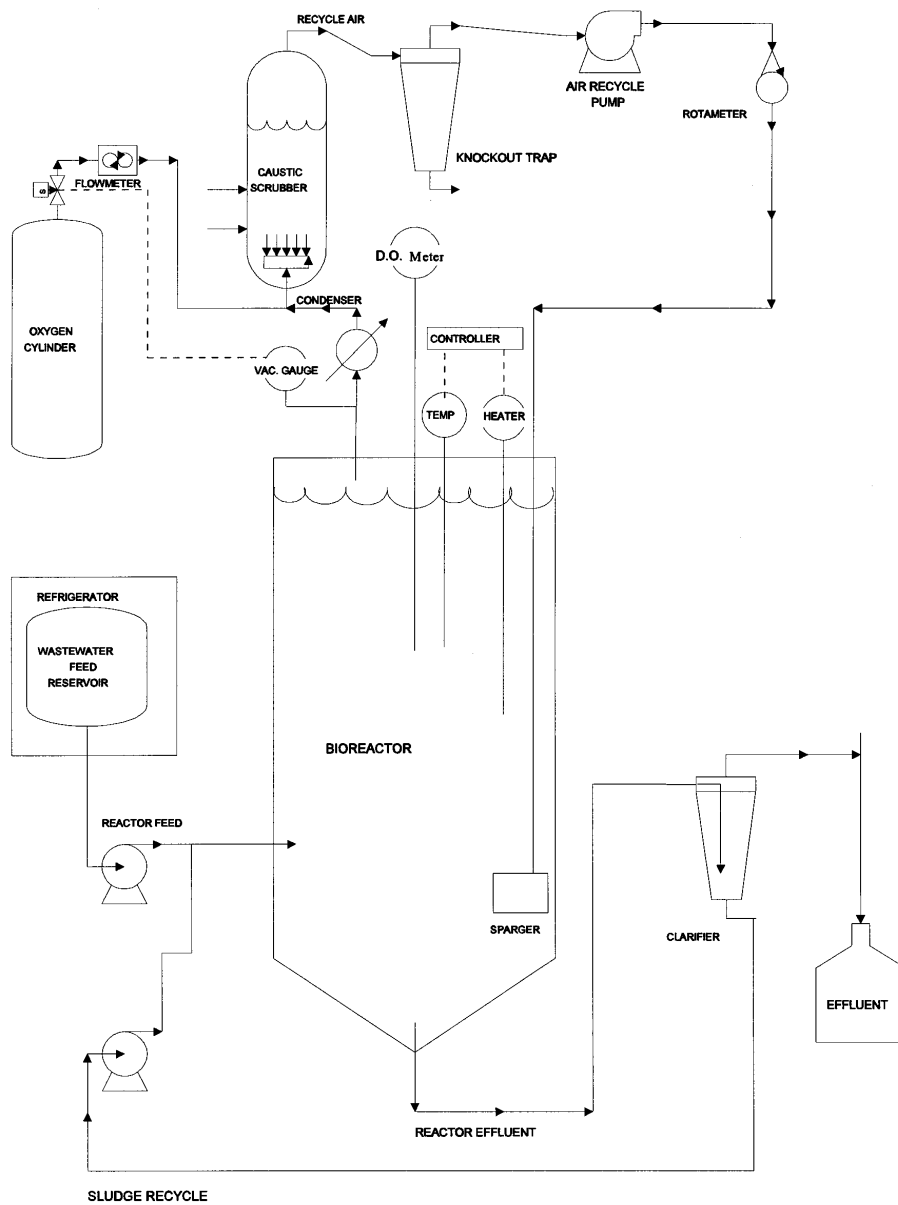
scale systems embody biodegradation and air emissions in competing reactions. This method measures biodegradation in absence of air emissions. The rates measured by this method shall be used in conjunction with the procedures listed in appendix C of this part to calculate the fraction emitted to the air versus the fraction biodegraded.

1.2 *Principle*. A self-contained benchtop bioreactor system is assembled in the laboratory. A sample of mixed liquor is added and the waste stream is then fed continuously. The benchtop bioreactor is operated under conditions nearly identical to the target full-scale activated sludge process, except that air emissions are not a factor. The benchtop bioreactor temperature, dissolved oxygen concentration, average residence time in the reactor, waste composition, biomass concentration, and biomass composition of the target full-scale process are the parameters which are duplicated in the laboratory system. Biomass shall be removed from the target full-scale activated sludge unit and held for no more than 4 hours prior to use in the benchtop bioreactor. If antifoaming agents are used in the full-scale system, they shall also be used in the benchtop bioreactor. The feed flowing into and the effluent exiting the benchtop bioreactor are analyzed to determine the biodegradation rates of the target compounds. The choice of analytical methodology for measuring the compounds of interest at the inlet and outlet to the benchtop bioreactor are left to the discretion of the source, except where validated methods are available.

2. Apparatus

Figure 1 illustrates a typical laboratory apparatus used to measure biodegradation rates. While the following description refers to Figure 1, the EPA recognizes that alternative reactor configurations, such as alternative reactor shapes and locations of probes and the feed inlet, will also meet the intent of this method. Ensure that the benchtop

bioreactor system is self-contained and isolated from the atmosphere by leak-checking fittings, tubing, etc.



EPA METHOD 304B BIOREACTOR SYSTEM

2.1 *Laboratory apparatus.*

2.1.1 *Benchtop Bioreactor.* The biological reaction is conducted in a biological oxidation reactor of at least 6-liters capacity. The benchtop bioreactor is sealed and equipped with internal probes for controlling and monitoring dissolved oxygen and internal temperature. The top of the benchtop bioreactor is equipped for aerators, gas flow ports, and instrumentation (while ensuring that no leaks to the atmosphere exist around the fittings).

2.1.2 *Aeration gas.* Aeration gas is added to the benchtop bioreactor through three diffusers, which are glass tubes that extend to the bottom fifth of the reactor depth. A pure oxygen pressurized cylinder is recommended in order to maintain the specified oxygen concentration. Install a blower (e.g., Diaphragm Type, 15 SCFH capacity) to blow the aeration gas into the benchtop bioreactor diffusers. Measure the aeration gas flow rate with a rotameter (e.g., 0–15 SCFH recommended). The aeration gas will rise through the benchtop bioreactor, dissolving oxygen into the mixture in the process. The aeration gas must provide sufficient agitation to keep the solids in suspension. Provide an exit for the aeration gas from the top flange of the benchtop bioreactor through a water-cooled (e.g., Allihn-type) vertical condenser. Install the condenser through a gas-tight fitting in the benchtop bioreactor closure. Design the system so that at least 10 percent of the gas flows through an alkaline scrubber containing 175 mL of 45 percent by weight solution of potassium hydroxide (KOH) and 5 drops of 0.2 percent alizarin yellow dye. Route the balance of the gas through an adjustable scrubber bypass. Route all of the gas through a 1-L knock-out flask to remove entrained moisture and then to the intake of the blower. The blower recirculates the gas to the benchtop bioreactor.

2.1.3 *Wastewater Feed.* Supply the wastewater feed to the benchtop bioreactor in a collapsible low-density polyethylene container or collapsible liner in a container (e.g., 20 L) equipped with a spigot cap (collapsible containers or liners of other material may be required due to the permeability of some volatile compounds through polyethylene). Obtain the wastewater feed by sampling the wastewater feed in the target process. A representative sample of wastewater shall be obtained from the piping leading to the aeration tank. This sample may be obtained from existing sampling valves at the discharge of the wastewater feed pump, or collected from a pipe discharging to the aeration tank, or by pumping from a well-mixed equalization tank upstream from the aeration tank. Alternatively, wastewater can be pumped continuously to the laboratory apparatus from a bleed stream taken from the equalization tank of the full-scale treatment system.

2.1.3.1 *Refrigeration System.* Keep the wastewater feed cool by ice or by refrigeration to 4°C. If using a bleed stream from the equalization tank, refrigeration is not required if the residence time in the bleed stream is less than five minutes.

2.1.3.2 *Wastewater Feed Pump.* The wastewater is pumped from the refrigerated container using a variable-speed peristaltic pump drive equipped with a peristaltic pump head. Add the feed solution to the benchtop bioreactor through a fitting on the top flange. Determine the rate of feed addition to provide a retention time in the benchtop bioreactor that is numerically equivalent to the retention time in the target full-scale system. The wastewater shall be fed at a rate sufficient to achieve 90 to 100 percent of the target full-scale system residence time.

2.1.3.3 *Treated wastewater feed.* The benchtop bioreactor effluent exits at the bottom of the reactor through a tube and proceeds to the clarifier.

2.1.4 *Clarifier.* The effluent flows to a separate closed clarifier that allows separation of biomass and effluent (e.g., 2-liter pear-shaped glass separatory funnel, modified by removing the stopcock and adding a 25-mm OD glass tube at the bottom). Benchtop bioreactor effluent enters the clarifier through a tube inserted to a depth of 0.08 m (3 in.) through a stopper at the top of the clarifier. System effluent flows from a tube inserted through the stopper at the top of the clarifier to a drain (or sample bottle when sampling). The underflow from the clarifier leaves from the glass tube at the bottom of the clarifier. Flexible tubing connects this fitting to the sludge recycle pump. This pump is coupled to a variable speed pump drive. The discharge from this pump is returned through a tube inserted in a port on the side of the benchtop bioreactor. An additional port is provided near the bottom of the benchtop bioreactor for sampling the reactor contents. The mixed liquor from the benchtop bioreactor flows into the center of the clarifier. The clarified system effluent separates from the biomass and flows through an exit near the top of the clarifier. There shall be no headspace in the clarifier.

2.1.5 *Temperature Control Apparatus.* Capable of maintaining the system at a temperature equal to the temperature of the full-scale system. The average temperature should be maintained within $\pm 2^\circ\text{C}$ of the set point.

2.1.5.1 *Temperature Monitoring Device.* A resistance type temperature probe or a thermocouple connected to a temperature read-out with a resolution of 0.1°C or better.

2.1.5.2 *Benchtop Bioreactor Heater.* The heater is connected to the temperature control device.

2.1.6 *Oxygen Control System.* Maintain the dissolved oxygen concentration at the levels present in the full-scale system. Target full-

scale activated sludge systems with dissolved oxygen concentration below 2 mg/L are required to maintain the dissolved oxygen concentration in the benchtop bioreactor within 0.5 mg/L of the target dissolved oxygen level. Target full-scale activated sludge systems with dissolved oxygen concentration above 2 mg/L are required to maintain the dissolved oxygen concentration in the benchtop bioreactor within 1.5 mg/L of the target dissolved oxygen concentration; however, for target full-scale activated sludge systems with dissolved oxygen concentrations above 2 mg/L, the dissolved oxygen concentration in the benchtop bioreactor may not drop below 1.5 mg/L. If the benchtop bioreactor is outside the control range, the dissolved oxygen is noted and the reactor operation is adjusted.

2.1.6.1 Dissolved Oxygen Monitor. Dissolved oxygen is monitored with a polarographic probe (gas permeable membrane) connected to a dissolved oxygen meter (e.g., 0 to 15 mg/L, 0 to 50°C).

2.1.6.2 Benchtop Bioreactor Pressure Monitor. The benchtop bioreactor pressure is monitored through a port in the top flange of the reactor. This is connected to a gauge control with a span of 13-cm water vacuum to 13-cm water pressure or better. A relay is activated when the vacuum exceeds an adjustable setpoint which opens a solenoid valve (normally closed), admitting oxygen to the system. The vacuum setpoint controlling oxygen addition to the system shall be set at approximately 2.5 ± 0.5 cm water and maintained at this setting except during brief periods when the dissolved oxygen concentration is adjusted.

2.1.7 Connecting Tubing. All connecting tubing shall be Teflon or equivalent in impermeability. The only exception to this specification is the tubing directly inside the pump head of the wastewater feed pump, which may be Viton, Silicone or another type of flexible tubing. Note: Mention of trade names or products does not constitute endorsement by the U.S. Environmental Protection Agency.

2.2 Analysis. If the identity of the compounds of interest in the wastewater is not known, a representative sample of the wastewater shall be analyzed in order to identify all of the compounds of interest present. A gas chromatography/mass spectrometry screening method is recommended.

2.2.1 After identifying the compounds of interest in the wastewater, develop and/or use one or more analytical technique capable of measuring each of those compounds (more than one analytical technique may be required, depending on the characteristics of the wastewater). Method 18, found in appendix A of 40 CFR part 60, may be used as a guideline in developing the analytical technique. Purge and trap techniques may be used for analysis providing the target com-

ponents are sufficiently volatile to make this technique appropriate. The limit of quantitation for each compound shall be determined.¹ If the effluent concentration of any target compound is below the limit of quantitation determined for that compound, the operation of the Method 304 unit may be altered to attempt to increase the effluent concentration above the limit of quantitation. Modifications to the method shall be approved prior to the test. The request should be addressed to Method 304 contact, Emissions Measurement Center, Mail Drop 19, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

2.2.2 Calibration Standards. Prepare calibration standards from pure certified standards in an aqueous medium. Prepare and analyze three concentrations of calibration standards for each target component (or for a mixture of components) in triplicate daily throughout the analyses of the test samples. At each concentration level, a single calibration shall be within 5 percent of the average of the three calibration results. The low and medium calibration standards shall bracket the expected concentration of the effluent (treated) wastewater. The medium and high standards shall bracket the expected influent concentration.

3. Reagents

3.1 Wastewater. Obtain a representative sample of wastewater at the inlet to the full-scale treatment plant if there is an existing full-scale treatment plant (See Section 2.1.3). If there is no existing full-scale treatment plant, obtain the wastewater sample as close to the point of determination as possible. Collect the sample by pumping the wastewater into the 20-L collapsible container. The loss of volatiles shall be minimized from the wastewater by collapsing the container before filling, by minimizing the time of filling, and by avoiding a headspace in the container after filling. If the wastewater requires the addition of nutrients to support the biomass growth and maintain biomass characteristics, those nutrients are added and mixed with the container contents after the container is filled.

3.2 Biomass. Obtain the biomass or activated sludge used for rate constant determination in the bench-scale process from the existing full-scale process or from a representative biomass culture (e.g., biomass that has been developed for a future full-scale process). This biomass is preferentially obtained from a thickened acclimated mixed liquor sample. Collect the sample either by bailing from the mixed liquor in the aeration tank with a weighted container, or by collecting aeration tank effluent at the effluent overflow weir. Transport the sample to the laboratory within no more than 4 hours of

collection. Maintain the biomass concentration in the benchtop bioreactor at the level of the target full-scale system +10 percent throughout the sampling period of the test method.

4. Procedure

SAFETY NOTE: If explosive gases are produced as a byproduct of biodegradation and could realistically pose a hazard, closely monitor headspace concentration of these gases to ensure laboratory safety. Placement of the benchtop bioreactor system inside a laboratory hood is recommended regardless of byproducts produced.

4.1 Benchtop Bioreactor Operation. Charge the mixed liquor to the benchtop bioreactor, minimizing headspace over the liquid surface to minimize entrainment of mixed liquor in the circulating gas. Fasten the benchtop bioreactor headplate to the reactor over the liquid surface. Maintain the temperature of the contents of the benchtop bioreactor system at the temperature of the target full-scale system, +2 °C, throughout the testing period. Monitor and record the temperature of the reactor contents at least to the nearest 0.1 °C.

4.1.1 Wastewater Storage. Collect the wastewater sample in the 20-L collapsible container. Store the container at 4 °C throughout the testing period. Connect the container to the benchtop bioreactor feed pump.

4.1.2 Wastewater Flow Rate. The hydraulic residence time of the aeration tank is calculated as the ratio of the volume of the tank (L) to the flow rate (L/min). At the beginning of a test, the container shall be connected to the feed pump and solution shall be pumped to the benchtop bioreactor at the required flow rate to achieve the calculated hydraulic residence time of wastewater in the aeration tank.

$$Q_{\text{test}} = Q_{\text{fs}} \frac{L}{V_{\text{fs}}} \quad \text{Eqn 304B-1}$$

Where:

Q_{test} =wastewater flow rate (L/min)

Q_{fs} =average flow rate of full-scale process (L/min)

V_{fs} =volume of full-scale aeration tank (L)

The target flow rate in the test apparatus is the same as the flow rate in the target full-scale process multiplied by the ratio of benchtop bioreactor volume (e.g., 6 L) to the volume of the full-scale aeration tank. The hydraulic residence time shall be maintained at 90 to 100 percent of the residence time maintained in the target full-scale unit. A nominal flow rate is set on the pump based on a pump calibration. Changes in the elasticity of the tubing in the pump head and the accumulation of material in the tubing affect

this calibration. The nominal pumping rate shall be changed as necessary based on volumetric flow measurements. Discharge the benchtop bioreactor effluent to a wastewater storage, treatment, or disposal facility, except during sampling or flow measurement periods.

4.1.3 Sludge Recycle Rate. Set the sludge recycle rate at a rate sufficient to prevent accumulation in the bottom of the clarifier. Set the air circulation rate sufficient to maintain the biomass in suspension.

4.1.4 Benchtop Bioreactor Operation and Maintenance. Temperature, dissolved oxygen concentration, flow rate, and air circulation rate shall be measured and recorded three times throughout each day of testing. If other parameters (such as pH) are measured and maintained in the target full-scale unit, these parameters shall, where appropriate, be monitored and maintained to full-scale specifications in the benchtop bioreactor. At the beginning of each sampling period (section 4.2), sample the benchtop bioreactor contents for suspended solids analysis. Take this sample by loosening a clamp on a length of tubing attached to the lower side port. Determine the suspended solids gravimetrically by the Gooch crucible/glass fiber filter method for total suspended solids, in accordance with Standard Methods³ or equivalent. When necessary, sludge shall be wasted from the lower side port of the benchtop bioreactor, and the volume that is wasted shall be replaced with an equal volume of the benchtop bioreactor effluent. Add thickened activated sludge mixed liquor as necessary to the benchtop bioreactor to increase the suspended solids concentration to the desired level. Pump this mixed liquor to the benchtop bioreactor through the upper side port (Item 24 in Figure 1). Change the membrane on the dissolved oxygen probe before starting the test. Calibrate the oxygen probe immediately before the start of the test and each time the membrane is changed. The scrubber solution shall be replaced each weekday with 175 mL 45 percent W/W KOH solution to which five drops of 0.2 percent alizarin yellow indicator in water have been added. The potassium hydroxide solution in the alkaline scrubber shall be changed if the alizarin yellow dye color changes.

4.1.5 Inspection and Correction Procedures. If the feed line tubing becomes clogged, replace with new tubing. If the feed flow rate is not within 5 percent of target flow any time the flow rate is measured, reset pump or check the flow measuring device and measure flow rate again until target flow rate is achieved.

4.2 Test Sampling. At least two and one half hydraulic residence times after the system has reached the targeted specifications shall be permitted to elapse before the first sample is taken. Effluent samples of the clarifier discharge (Item 20 in Figure 1) and the influent wastewater feed are collected in 40-mL

septum vials to which two drops of 1:10 hydrochloric acid (HCl) in water have been added. Sample the clarifier discharge directly from the drain line. These samples will be composed of the entire flow from the system for a period of several minutes. Feed samples shall be taken from the feed pump suction line after temporarily stopping the benchtop bioreactor feed, removing a connector, and squeezing the collapsible feed container. Store both influent and effluent samples at 4°C immediately after collection and analyze within 8 hours of collection.

4.2.1 Frequency of Sampling. During the test, sample and analyze the wastewater feed and the clarifier effluent at least six times. The sampling intervals shall be separated by at least 8 hours. During any individual sampling interval, sample the wastewater feed simultaneously with or immediately after the effluent sample. Calculate the RSD of the amount removed (i.e., effluent concentration—wastewater feed concentration). The RSD values shall be < 15 percent. If an RSD value is > 15 percent, continue sampling and analyzing influent and effluent sets of samples until the RSD values are within specifications.

4.2.2 Sampling After Exposure of System to Atmosphere. If, after starting sampling procedures, the benchtop bioreactor system is exposed to the atmosphere (due to leaks, maintenance, etc.), allow at least one hydraulic residence time to elapse before resuming sampling.

5. Operational Checks and Calibration

5.1 Dissolved Oxygen. Fluctuation in dissolved oxygen concentration may occur for numerous reasons, including undetected gas leaks, increases and decreases in mixed liquor suspended solids resulting from cell growth and solids loss in the effluent stream, changes in diffuser performance, cycling of effluent flow rate, and overcorrection due to faulty or sluggish dissolved oxygen probe response. Control the dissolved oxygen concentration in the benchtop bioreactor by changing the proportion of oxygen in the circulating aeration gas. Should the dissolved oxygen concentration drift below the designated experimental condition, bleed a small amount of aeration gas from the system on the pressure side (i.e., immediately upstream of one of the diffusers). This will create a vacuum in the system, triggering the pressure sensitive relay to open the solenoid valve and admit oxygen to the system. Should the dissolved oxygen concentration drift above the designated experimental condition, slow or stop the oxygen input to the system until the dissolved oxygen concentration approaches the correct level.

5.2 Sludge Wasting. Determine the suspended solids concentration (section 4.1.4) at the beginning of a test, and once per day thereafter during the test. If the test is com-

pleted within a two day period, determine the suspended solids concentration after the final sample set is taken. If the suspended solids concentration exceeds the specified concentration, remove a fraction of the sludge from the benchtop bioreactor. The required volume of mixed liquor to remove is determined as follows:

$$V_w = V_r \left(\frac{S_m - S_s}{S_m} \right) \quad \text{Eqn 304B-2}$$

Where:

V_w is the wasted volume (Liters),

V_r is the volume of the benchtop bioreactor (Liters),

S_m is the measured solids (g/L), and

S_s is the specified solids (g/L).

Remove the mixed liquor from the benchtop bioreactor by loosening a clamp on the mixed liquor sampling tube and allowing the required volume to drain to a graduated flask. Clamp the tube when the correct volume has been wasted. Replace the volume of the liquid wasted by pouring the same volume of effluent back into the benchtop bioreactor. Dispose of the waste sludge properly.

5.3 Sludge Makeup. In the event that the suspended solids concentration is lower than the specifications, add makeup sludge back into the benchtop bioreactor. Determine the amount of sludge added by the following equation:

$$V_w = V_r \left(\frac{S_s - S_m}{S_w} \right) \quad \text{Eqn 304B-3}$$

Where:

V_w is the volume of sludge to add (Liters),

V_r is the volume of the benchtop bioreactor (Liters),

S_w is the solids in the makeup sludge (g/L),

S_m is the measured solids (g/L), and

S_s is the specified solids (g/L).

5.4 Wastewater Pump Calibration. Determine the wastewater flow rate by collecting the system effluent for a time period of at least one hour, and measuring the volume with a graduated cylinder. Record the collection time period and volume collected. Determine flow rate. Adjust the pump speed to deliver the specified flow rate.

6. Calculations

6.1 Nomenclature. The following symbols are used in the calculations.

C_i =Average inlet feed concentration for a compound of interest, as analyzed (mg/L)

C_o =Average outlet (effluent) concentration for a compound of interest, as analyzed (mg/L)

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X=Biomass concentration, mixed liquor suspended solids (g/L)

t=Hydraulic residence time in the benchtop bioreactor (hours)

V=Volume of the benchtop bioreactor (L)

Q=Flow rate of wastewater into the benchtop bioreactor, average (L/hour)

6.2 *Residence Time.* The hydraulic residence time of the benchtop bioreactor is equal to the ratio of the volume of the

benchtop bioreactor (L) to the flow rate (L/h)

$$t = \frac{V}{Q} \quad \text{Eqn 304B-4}$$

6.3 *Rate of Biodegradation.* Calculate the rate of biodegradation for each component with the following equation:

$$\text{Rate} \left(\frac{\text{mg}}{\text{L-h}} \right) = \frac{C_i - C_o}{t} \quad \text{Eqn 304B-5}$$

6.4 *First-Order Biorate Constant.* Calculate the first-order biorate constant (K1) for each component with the following equation:

$$K1 \left(\frac{\text{L}}{\text{g-h}} \right) = \frac{C_i - C_o}{t C_o X} \quad \text{Eqn 304B-6}$$

6.5 *Relative Standard Deviation (RSD).* Determine the standard deviation of both the influent and effluent sample concentrations (S) using the following equation:

$$\text{RSD} = \frac{100}{\bar{S}} \left(\sum_{i=1}^n \frac{(S_i - \bar{S})^2}{(n-1)} \right)^{1/2} \quad \text{Eqn 304B-7}$$

6.6 *Determination of Percent Air Emissions and Percent Biodegraded.* Use the results from this test method and follow the applicable procedures in appendix C of 40 CFR part 63, entitled, "Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit" to determine F_{bio} .

7. Bibliography

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4. Water⁷, Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)—Air Emission Models, U.S. Environmental Protection Agency, EPA-450/3-87-026, Review Draft, November 1989.
5. Chemdat⁷, Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)—Air Emission Models, U.S. Environmental Protection Agency, EPA-450/3-87-026, Review Draft, November 1989.

METHOD 305: MEASUREMENT OF EMISSION POTENTIAL OF INDIVIDUAL VOLATILE ORGANIC COMPOUNDS IN WASTE

1. Applicability and Principle

This procedure is used to determine the emission potential of individual volatile organics (VOs) in waste. The heated purge conditions established by Method 25D (40 CFR part 60, Appendix A) are used to remove VOs from a 10-g sample of waste suspended in a 50/50 solution of polyethylene glycol (PEG) and water. The purged VOs are quantified by using the sample collection and analytical techniques appropriate for the VOs present in the waste. The recovery efficiency of the sample collection and analytical technique is determined for each waste matrix. A correction factor is determined for each compound (if acceptable recovery criteria requirements are met of 70 to 130 percent recovery for every target compound), and the measured waste concentration is corrected with the correction factor for each compound. A minimum of three replicate waste samples shall be analyzed.

2. Apparatus and Materials

2.1 Method 25D Purge Apparatus.

2.1.1 Purge Chamber. The purge chamber shall accommodate the 10-g sample of waste suspended in a matrix of 50 mL of PEG and 50 mL of deionized, hydrocarbon-free water. Three fittings are used on the glass chamber top. Two #7 Ace-threads are used for the purge gas inlet and outlet connections. A #50 Ace-thread is used to connect the top of the chamber to the base (see Figure 1). The base of the chamber has a side-arm equipped with a #22 Sovirel fitting to allow for easy sample introductions into the chamber. The dimensions of the chamber are shown in Figure 1.

2.1.2 Flow Distribution Device (FDD). The FDD enhances the gas-to-liquid contact for improved purging efficiency. The FDD is a 6 mm OD by 30 cm long glass tube equipped with four arm bubblers as shown in Figure 1.

Each arm shall have an opening of 1 mm in diameter.

2.1.3 Coalescing Filter. The coalescing filter serves to discourage aerosol formation of sample gas once it leaves the purge chamber. The glass filter has a fritted disc mounted 10 cm from the bottom. Two #7 Ace-threads are used for the inlet and outlet connections. The dimensions of the chamber are shown in Figure 2.

2.1.4 Oven. A forced convection airflow oven capable of maintaining the purge chamber and coalescing filter at $75\pm 2^{\circ}\text{C}$.

2.1.5 Toggle Valve. An on/off valve constructed from brass or stainless steel rated to 100 psig. This valve is placed in line between the purge nitrogen source and the flow controller.

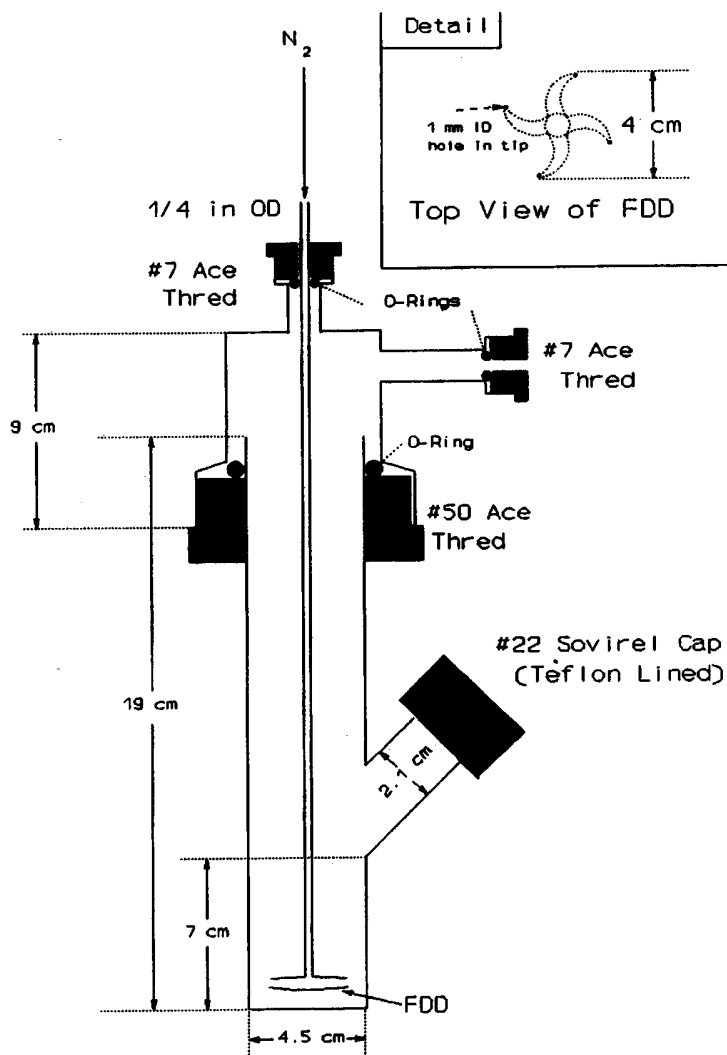


Figure 1. Schematic of Purge Chamber

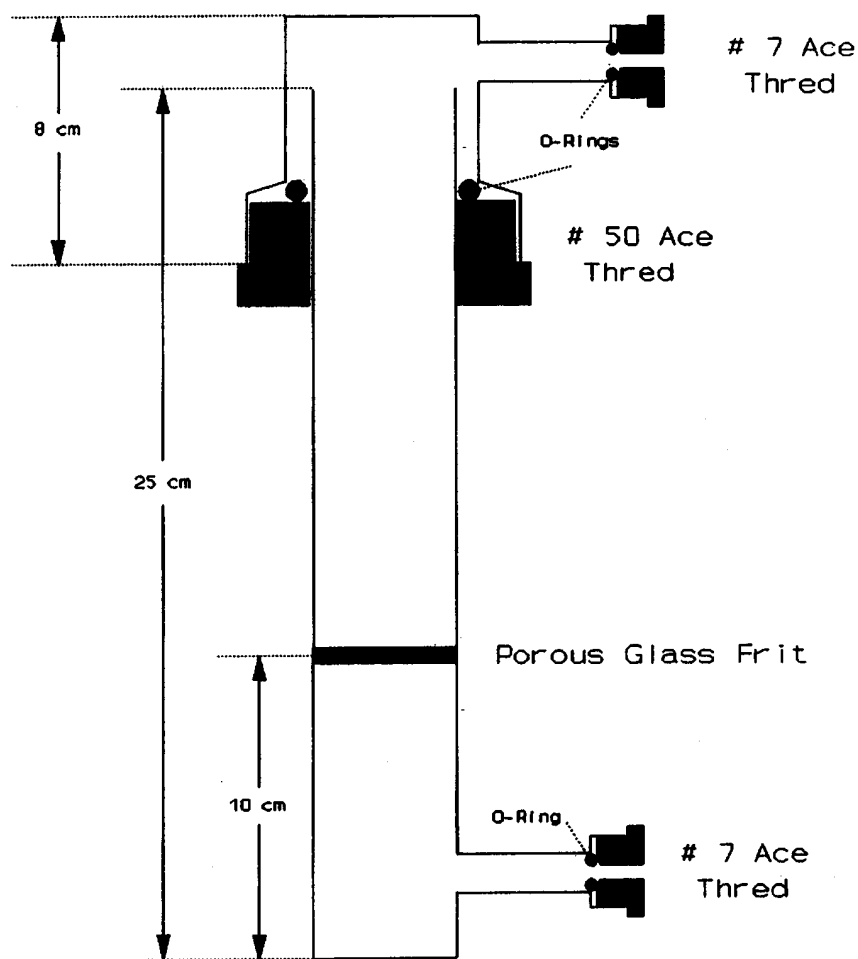


Figure 2. Schematic of Coalescing Filter

2.1.6 Flow Controller. High-quality stainless steel flow controller capable of restricting a flow of nitrogen to 6 ± 0.06 L/min at 40 psig.

2.1.7 Polyethylene Glycol Cleaning System.

2.1.7.1 Round-Bottom Flask. One liter, three-neck glass round-bottom flask for cleaning PEG. Standard taper 24/40 joints are mounted on each neck.

2.1.7.2 Heating Mantle. Capable of heating contents of the 1-L flask to 120°C .

2.1.7.3 Nitrogen Bubbler. Teflon or glass tube, 0.25 in. OD.

2.1.7.4 Thermometer. Partial immersion glass thermometer.

2.1.7.5 Hose Adapter. Glass with 24/40 standard tapered joint.

2.1.8 Reagents.

2.1.8.1 Polyethylene Glycol. Ninety-eight percent pure organic polymer with an average molecular weight of 400. Volatile organics are removed from the PEG prior to use by heating to $120 \pm 5^\circ\text{C}$ and purging with pure nitrogen at 1 L/min for 2 hours. The PEG is stored at room temperature under a nitrogen purge maintained at 1 L/min until used. A typical apparatus used to clean the PEG is shown in Figure 3.

2.1.8.2 Water. Organic-free deionized water is required.

2.1.8.3 Nitrogen. High-purity nitrogen (less than 0.5 ppm total hydrocarbons) is used to remove test compounds from the purge matrix. The source of nitrogen shall be regulated continuously to 40 psig before the on/off toggle valve.

2.2 Volatile Organic Recovery System.

2.2.1 Splitter Valve (Optional). Stainless steel cross-pattern valve capable of splitting nominal flow rates from the purge flow of 6 L/min. The valve shall be maintained at $75\pm 2^{\circ}\text{C}$ in the heated zone and shall be placed downstream of the coalescing filter. It is recommended that 0.125 in. OD tubing be used to direct the split vent flow from the heated zone. The back pressure caused by the 0.125 in. OD tubing is critical for maintaining proper split valve operation. Note: The splitter valve design is optional; it may be used in cases where the concentration of a pollutant would saturate the adsorbents.

2.2.2 Injection Port. Stainless steel 1/4 in. OD compression fitting tee with a 6-mm septum fixed on the top port. The injection port is the point of entry for the recovery study solution. If using a gaseous standard to determine recovery efficiency, connect the gaseous standard to the injection port of the tee.

2.2.3 Knockout Trap (Optional but Recommended). A 25-mL capacity glass reservoir body with a full-stem impinger (to avoid leaks, a modified midjet glass impinger with a screw cap and ball/socket clamps on the inlet and outlet is recommended). The empty impinger is placed in an ice water bath between the injection port and the sorbent cartridge. Its purpose is to reduce the water content of the purge gas (saturated at 75°C) before the sorbent cartridge.

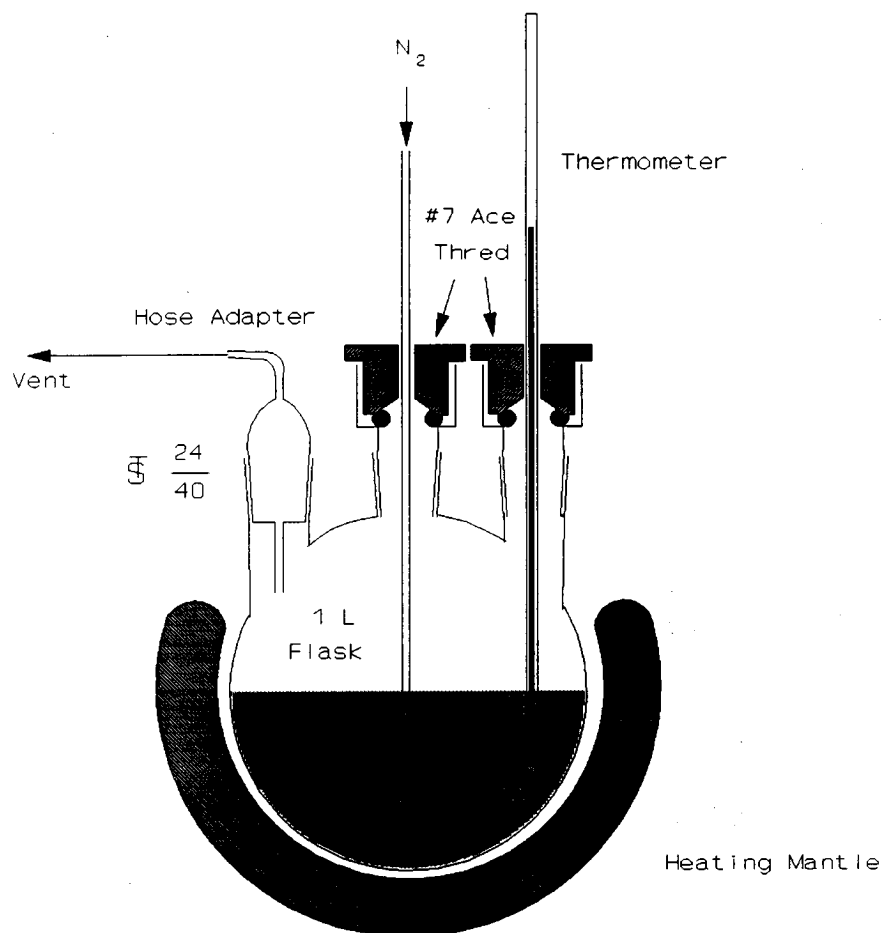


FIGURE 3. SCHEMATIC OF PEG CLEANING SYSTEM

2.2.4 Insulated Ice Bath. A 350-mL dewar or other type of insulated bath is used to maintain ice water around the knockout trap.

2.2.5 Sorbent Cartridges. Commercially available glass or stainless steel cartridge packed with one or more appropriate sorbents. The amount of adsorbent packed in the cartridge depends on the breakthrough volume of the test compounds but is limited by back pressure caused by the packing (not to exceed 7 psig). More than one sorbent cartridge placed in series may be necessary depending upon the mixture of the measured components.

2.2.6 Volumetric Glassware. Type A glass 10-mL volumetric flasks for measuring a

final volume from the water catch in the knockout trap.

2.2.7 Thermal Desorption Unit. A clam-shell type oven, used for the desorption of direct thermal desorption sorbent tubes. The oven shall be capable of increasing the temperature of the desorption tubes rapidly to recommended desorption temperature.

2.2.8 Ultrasonic Bath. Small bath used to agitate sorbent material and desorption solvent. Ice water shall be used in the bath because of heat transfer caused by operation of the bath.

2.2.9 Desorption Vials. Four-dram (15-mL) capacity borosilicate glass vials with Teflon-lined caps.

2.2.10 Reagents.

2.2.10.1 Water. Same as specified in Section 2.1.8.2.

2.2.10.2 Desorption Solvent (when used). Appropriate high-purity (99.99 percent) solvent for desorption shall be used. Analysis shall be performed (utilizing the same analytical technique as that used in the analysis of the waste samples) on each lot to determine purity.

2.3 Analytical System. A gas chromatograph (GC) is commonly used to separate and quantify compounds from the sample collection and recovery procedure. Method 18 (40 CFR part 60, appendix A) may be used as a guideline for determining the appropriate GC column and GC detector based on the test compounds to be determined. Other types of analytical instrumentation may be used (i.e., HPLC) in lieu of GC systems as long as the recovery efficiency criteria of this method are met.

2.3.1 Gas Chromatograph. The GC shall be equipped with a constant-temperature liquid injection port or a heated sampling loop/valve system, as appropriate. The GC oven shall be temperature-programmable over the useful range of the GC column. The choice of

detectors is based on the test compounds to be determined.

2.3.2 GC Column. Select the appropriate GC column based on (1) literature review or previous experience, (2) polarity of the analytes, (3) capacity of the column, or (4) resolving power (i.e., length, diameter, film thickness) required.

2.3.3 Data System. A programmable electronic integrator for recording, analyzing, and storing the signal generated by the detector.

2.3.4 Reagents. The gases required for GC operation shall be of the highest obtainable purity (hydrocarbon free). Consult the operating manual for recommended settings.

3. Procedure

Assemble the glassware and associated fittings (see Figures 4 or 5, as appropriate) and leak-check the system (approximately 7 psig is the target pressure). After an initial leak check, mark the pressure gauge and use the initial checkpoint to monitor for leaks throughout subsequent analyses. If the pressure in the system drops below the target pressure at any time during analysis, that analysis shall be considered invalid.

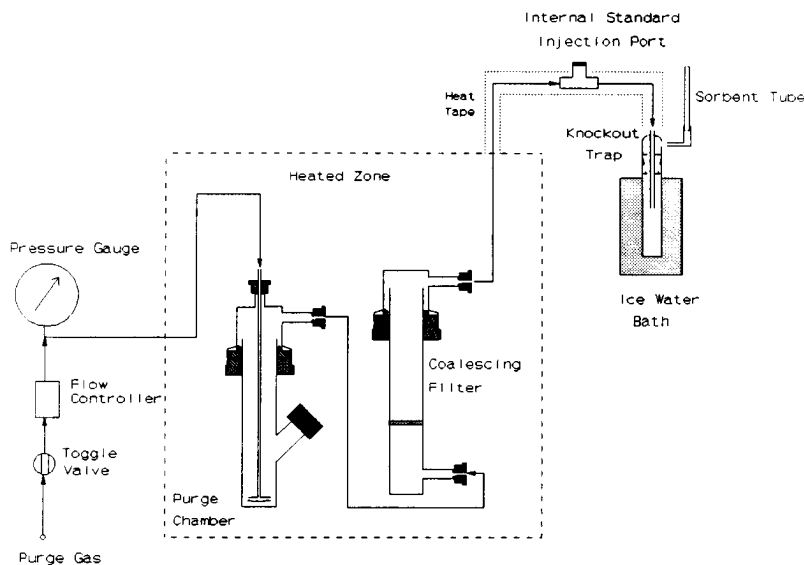


FIGURE 4. SCHEMATIC OF PURGE AND RECOVERY APPARATUS

3.1 Recovery Efficiency Determination. Determine the individual recovery efficiency (RE) for each of the target compounds in duplicate before the waste samples are ana-

lyzed. To determine the RE, generate a water blank (Section 3.2.4) and use the injection port to introduce a known volume of spike solution (or certified gaseous standard)

containing all of the target compounds at the levels expected in the waste sample. Introduce the spike solution immediately after the nitrogen purge has been started (Section 3.2.2). Follow the procedures outlined in Section 3.2.3. Analyze the recovery efficiency samples using the techniques described in Section 3.3. Determine the recovery efficiency (Equation 1, Section 4.2) by comparing the amount of compound recovered to the theoretical amount spiked. Determine the RE twice for each compound; the RSD shall be ≤ 10 percent for each compound. If the RSD for any compound is not ≤ 10 percent, modify the sampling/analytical procedure and complete an RE study in duplicate, or continue determining RE until the RSD meets the acceptable criteria. The average RE shall be $0.70 \leq RE \leq 1.30$ for each compound. If the average RE does not meet these criteria, an alternative sample collection and/or analysis technique shall be developed and the recovery efficiency determination shall be repeated for that compound until the criteria are met for every target compound. Example modifications of the sampling/analytical system include changing the adsorbent material, changing the desorption solvent, utilizing direct thermal desorption of test compounds from the sorbent tubes, utilizing another analytical technique.

3.2 Sample Collection and Recovery.

3.2.1 The sample collection procedure in Method 25D shall be used to collect (into a preweighed vial) 10 g of waste into PEG, cool, and ship to the laboratory. Remove the sample container from the cooler and wipe the exterior to remove any ice or water. Weigh the container and sample to the nearest 0.01 g and record the weight. Pour the sample from the container into the purge flask. Rinse the sample container three times with approximately 6 mL of PEG (or the volume needed to total 50 mL of PEG in the purge flask), transferring the rinses to the purge flask. Add 50 mL of organic-free deionized water to the purge flask. Cap the purge flask tightly in between each rinse and after adding all the components into the flask.

3.2.2 Allow the oven to equilibrate to $75 \pm 1^\circ\text{C}$. Begin the sample recovery process by turning the toggle valve on, thus allowing a 6-L/min flow of pure nitrogen through the purge chamber.

3.2.3 Stop the purge after 30 min. Immediately remove the sorbent tube(s) from the apparatus and cap both ends. Remove the knockout trap and transfer the water catch to a 10-mL volumetric flask. Rinse the trap with organic-free deionized water and transfer the rinse to the volumetric flask. Dilute to the 10-mL mark with water. Transfer the water sample to a sample vial and store at 4°C with zero headspace. The analysis of the contents of the water knockout trap is optional for this method. If the target com-

pounds are water soluble, analysis of the water is recommended; meeting the recovery efficiency criteria in these cases would be difficult without adding the amount captured in the knockout trap.

3.2.4 Water Blank. A water blank shall be analyzed daily to determine the cleanliness of the purge and recovery system. A water blank is generated by adding 60 mL of organic-free deionized water to 50 mL of PEG in the purge chamber. Treat the blank as described in Section 3.2.2 and 3.2.3. The purpose of the water blank is to insure that no contaminants exist in the sampling and analytical apparatus which would interfere with the quantitation of the target compounds. If contaminants are present, locate the source of contamination, remove it, and repeat the water blank analysis.

3.3 Sample Analysis. Sample analysis in the context of this method refers to techniques to remove the target compounds from the sorbent tubes, separate them using a chromatography technique, and quantify them with an appropriate detector. Two types of sample extraction techniques typically used for sorbents include solvent desorption or direct thermal desorption of test compounds to a secondary focusing unit (either sorbent or cryogen based). The test compounds are then typically transferred to a GC system for analysis. Other analytical systems may be used (i.e., HPLC) in lieu of GC systems as long as the recovery efficiency criteria of this method are met.

3.3.1 Recover the test compounds from the sorbent tubes that require solvent desorption by transferring the adsorbent material to a sample vial containing the desorption solvent. The desorption solvent shall be the same as the solvent used to prepare calibration standards. The volume of solvent depends on the amount of adsorbed material to be desorbed (1.0 mL per 100 mg of adsorbent material) and also on the amount of test compounds present. Final volume adjustment and or dilution can be made so that the concentration of test compounds in the desorption solvent is bracketed by the concentration of the calibration solutions. Ultrasonicate the desorption solvent for 15 min in an ice bath. Allow the sample to sit for a period of time so that the adsorbent material can settle to the bottom of the vial. Transfer the solvent with a pasteur pipet (minimizing the amount of adsorbent material taken) to another vial and store at 4°C .

3.3.2 The analytical instrument shall be calibrated with a minimum of three levels of standards for each compound whose concentrations bracket the concentration of test compounds from the sorbent tubes. Liquid calibration standards shall be used for calibration in the analysis of the solvent extracts. The liquid calibration standards shall be prepared in the desorption solvent matrix. The calibration standards may be prepared

and injected individually or as a mixture. If thermal desorption and focusing (onto another sorbent or cryogen focusing) are used, a certified gaseous mixture or a series of gaseous standards shall be used for calibration of the instrument. The gaseous standards shall be focused and analyzed in the same manner as the samples.

3.3.3 The analytical system shall be certified free from contaminants before a calibration is performed (see Section 3.2.4). The calibration standards are used to determine the linearity of the analytical system. Perform an initial calibration and linearity check by analyzing the three calibration standards for each target compound in triplicate starting with the lowest level and continuing to the highest level. If the triplicate analyses do not agree within 5 percent of their average, additional analyses will be needed until the 5 percent criteria is met. Calculate the response factor (Equation 3, Section 4.4) from the average area counts of the injections for each concentration level. Average the response factors of the standards for each compound. The linearity of the detector is acceptable if the response factor of each compound at a particular concentration is within 10 percent of the overall mean response factor for that compound. Analyze daily a mid-level calibration standard in duplicate and calculate a new response factor. Compare the daily response factor average to the average response factor calculated for the mid-level calibration during the initial linearity check; repeat the three-level calibration procedure if the daily average response factor differs from the initial linearity check mid-level response factor by more than 10 percent. Otherwise, proceed with the sample analysis.

3.3.4 Analyze the desorption solvent or direct thermal desorption tubes from each sample using the same analytical parameters used for the calibration standard. Calculate the total weight detected for each compound (Equation 4, Section 4.5). The slope (area/amount) and y-intercept are calculated from the line bracketed between the two closest calibration points. Correct the concentration of each waste sample with the appropriate recovery efficiency factor and the split flow ratio (if used). The final concentration of each individual test compound is calculated by dividing the corrected measured weight for that compound by the weight of the original sample determined in Section 3.2.1 (Equation 5, Section 4.6).

3.4 Repeat the sample collection, recovery, and analysis twice more, for a total of three samples. Report the corrected concentration of each of the waste samples, average waste concentration, and relative standard deviation (Equation 6, Section 4.7).

4. Calculations

4.1 Definitions and Variables

A_s =Mean area counts of test compound in standard.

A_u =Mean area counts of test compound in sample desorption solvent.

b =y-intercept of the line formed between the two closest calibration standards that bracket the concentration of the sample.

C_T =Amount of test compound (μg) in calibration standard.

CF =Correction for adjusting final amount of sample detected for losses during individual sample runs.

F_p =Nitrogen flow through the purge chamber (6 L/min).

F_s =Nitrogen split flow directed to the sample recovery system (use 6 L/min if split flow design was not used).

PPM =Final concentration of test compound in waste sample ($\mu\text{g/g}$).

RE =Recovery efficiency for adjusting final amount of sample detected for losses due to inefficient trapping and desorption techniques.

$R.F.$ =Response factor for test compound, calculated from a calibration standard.

S =Slope of the line (area counts/ C_T) formed between two closest calibration points that bracket the concentration of the sample.

W_c =Weight of test compound expected to be recovered in spike solution based on theoretical amount.

W_E =Weight of vial and PEG (g).

W_F =Weight of vial, PEG and waste sample (g).

W_S =Weight of original waste sample (g).

W_T =Corrected weight of test compound measured (μg) in sample.

W_X =Weight of test compound measured during analysis of recovery efficiency spike samples (μg).

4.2 Recovery efficiency for determining trapping/desorption efficiency of individual test compounds in the spike solution, decimal value.

$$RE = \frac{W_x}{W_c} \quad (1)$$

4.3 Weight of waste sample (g).

$$W_S = W_F - W_E \quad (2)$$

4.4 Response Factor for individual test compounds.

$$RF = \frac{C_T}{A_s} \quad (3)$$

4.5 Corrected weight of a test compound in the sample, in μg .

$$W_T = \frac{A_u - b}{S} \times \frac{1}{RE} \times \frac{F_p}{F_s} \quad (4)$$

4.6 Final concentration of a test compound in the sample in ppmw.

$$PPM = \frac{W_T}{W_S} \quad (5)$$

4.7 Relative standard deviation (RSD) calculation.

$$RSD = \frac{100}{PPM} \sqrt{\frac{\sum_{i=1}^n (PPM_i - \overline{PPM})^2}{n-1}} \quad (6)$$

METHOD 306—DETERMINATION OF CHROMIUM EMISSIONS FROM DECORATIVE AND HARD CHROMIUM ELECTROPLATING AND ANODIZING OPERATIONS

1. Applicability and Principle

1.1 Applicability. This method applies to the determination of chromium (Cr) in emissions from decorative and hard chrome electroplating facilities and anodizing operations.

1.2 Principle. (a) A sample is extracted isokinetically from the source using an unheated Method 5 sampling train (40 CFR part 60, appendix A), with a glass nozzle and probe liner, but with the filter omitted. The sample time has to be at least 2 hours. The Cr emissions are collected in an alkaline solution: 0.1 N sodium hydroxide (NaOH) or 0.1 N sodium bicarbonate (NaHCO₃). The collected samples remain in the alkaline solution until analysis. Samples with high Cr concentrations may be analyzed using inductively coupled plasma emission spectrometry (ICP) at 267.72 nm. Alternatively, if improved detection limits are required, a portion of the alkaline impinger solution is digested with nitric acid and analyzed by graphite furnace atomic absorption spectroscopy (GFAAS) at 357.9 nm.

(b) If it is desirable to determine hexavalent chromium (Cr⁶⁺) emissions, the samples may be analyzed using an ion chromatograph equipped with a post-column reactor (IC/PCR) and a visible wavelength detector. To increase sensitivity for trace levels of Cr⁶⁺, a preconcentration system can be used in conjunction with the IC/PCR.

2. Range, Sensitivity, Precision, and Interferences

2.1 Range. The recommended analytical range for each of the three analytical techniques is given below. The upper limit of all three techniques can be extended indefinitely by appropriate dilution.

2.1.1 GFAAS Range. As reported in Method 7191 of SW-846 (Citation 5 in Bibliog-

raphy), the optimum concentration range for GFAAS is 5 to 100 µg Cr/l of concentrated analyte.

2.1.2 ICP Range. A linear response curve for ICP can be obtained in the range of 10 to at least 500 µg Cr/l of absorbing solution.

2.1.3 IC/PCR Range. In 40 CFR part 266, appendix IX, the lower limit of the detection range for IC/PCR when employing a preconcentration procedure is reported to be about 0.1 µg Cr⁶⁺/l of absorbing solution.

2.2 Sensitivity.

2.2.1 Analytical Sensitivity.

2.2.1.1 ICP Analytical Sensitivity. The minimum detection limit for ICP, as reported in Method 6010A of SW-846, is 7 µg Cr/l.

2.2.1.2 GFAAS Analytical Sensitivity. The minimum detection limit for GFAAS, as reported in Method 7191 of SW-846, is 1 µg Cr/l.

2.2.1.3 IC/PCR Analytical Sensitivity. The minimum detection limit for IC/PCR with a preconcentrator, as reported in 40 CFR part 266, appendix IX is 0.05 µg Cr⁶⁺/l.

2.2.2 In-stack Sensitivity. The in-stack sensitivity depends upon the analytical detection limit, the volume of stack gas sampled, and the total volume of the impinger absorbing solution plus the rinses. Using the analytical detection limits given in sections 2.2.1.1, 2.2.1.2, and 2.2.1.3; a stack gas sample volume of 1.7 dscm; and a total liquid sample volume of 500 ml; the corresponding in-stack detection limits are 0.0021 mg Cr/dscm for ICP, 0.00015 mg Cr/dscm for GFAAS, and 0.000015 mg Cr⁶⁺/dscm for IC/PCR with preconcentration. However, it is recommended that the concentration of Cr in the analytical solutions be at least five times the analytical detection limit to optimize sensitivity in the analyses. Using this guideline and the same assumptions for impinger sample volume and stack gas sample volume (500 ml and 1.7 dscm, respectively), the recommended minimum stack concentrations for optimum sensitivity are 0.0103 mg Cr/dscm for ICP, 0.00074 mg Cr/dscm for GFAAS, and 0.000074 mg Cr⁶⁺/dscm for IC/

PCR with preconcentration. If required, the in-stack detection limits can be improved by either increasing the stack gas sample volume, reducing the volume of the digested sample for GFAAS, improving the analytical detection limits, or any combination of the three.

2.3 Precision. The following precision data have been reported for the three analytical methods. In the case of the GFAAS there is also bias data. In all cases, when sampling precision is combined with analytical precision, the resulting overall precision may be lower.

2.3.1 GFAAS Precision. As reported in Method 7191 of SW-846, in a single laboratory (EMSL), using Cincinnati, Ohio tap water spiked at concentrations of 19, 48, and 77 $\mu\text{g Cr/l}$, the standard deviations were ± 0.1 , ± 0.2 , and ± 0.8 , respectively. Recoveries at these levels were 97 percent, 101 percent, and 102 percent, respectively.

2.3.2 ICP Precision. As reported in Method 6010A of SW-846, in an EPA round-robin Phase 1 study, seven laboratories applied the ICP technique to acid/distilled water matrices that had been spiked with various metal concentrates. For true values of 10, 50, and 150 $\mu\text{g Cr/l}$; the mean reported values were 10, 50, and 149 $\mu\text{g Cr/l}$; and the mean percent relative standard deviations were 18, 3.3, and 3.8 percent, respectively.

2.3.3 IC/PCR Precision. As reported in 40 CFR part 266, appendix IX, the precision of the IC/PCR with sample preconcentration is 5 to 10 percent; the overall precision for sewage sludge incinerators emitting 120 ng/dscm of Cr^{+6} and 3.5 $\mu\text{g/dscm}$ of total Cr is 25 percent and 9 percent for Cr^{+6} and total Cr, respectively; and for hazardous waste incinerators emitting 300 ng/dscm of Cr^{+6} the precision is 20 percent.

2.4 Interferences.

2.4.1 GFAAS Interferences. Low concentrations of calcium and/or phosphate may cause interferences; at concentrations above 200 $\mu\text{g/l}$, calcium's effect is constant and eliminates the effect of phosphate. Calcium nitrate is therefore added to the concentrated analyte to ensure a known constant effect. Other matrix modifiers recommended by the instrument manufacturer may also be suitable. Nitrogen should not be used as the purge gas due to cyanide band interference. Background correction may be required because of possible significant levels of nonspecific absorption and scattering at the 357.9 nm analytical wavelength. Zeeman or Smith-Hieftje background correction is recommended to correct for interferences due to high levels of dissolved solids in the alkaline impinger solutions.

2.4.2 ICP Interferences.

2.4.2.1 ICP Spectral Interferences. (a) Spectral interferences are caused by:

(1) Overlap of a spectral line from another element;

(2) Unresolved overlap of molecular band spectra;

(3) Background contribution from continuous or recombination phenomena; and

(4) Stray light from the line emission of high-concentration elements.

(b) Spectral overlap may be compensated for by computer correcting the raw data after monitoring and measuring the interfering element. At the 267.72-nm Cr analytical wavelength, iron, manganese, and uranium are potential interfering elements. Background and stray light interferences can usually be compensated for by a background correction adjacent to the analytical line. Unresolved overlap requires the selection of an alternative Cr wavelength. Consult the instrument manufacturer's operation manual for interference correction procedures.

2.4.2.2 ICP Physical Interferences. High levels of dissolved solids in the samples may cause significant inaccuracies due to salt buildup at the nebulizer and torch tips. This problem can be controlled by diluting the sample or providing for extended rinse times between sample analyses. Standards are prepared in the same matrix as the samples (i.e., 0.1 N NaOH or 0.1 N NaHCO_3).

2.4.2.3 ICP Chemical Interferences. These include molecular compound formation, ionization effects and solute vaporization effects, and are usually not significant in ICP, especially if the standards and samples are matrix matched.

2.4.3 IC/PCR Interferences. Components in the sample matrix may cause Cr^{+6} to convert to trivalent chromium (Cr^{+3}) or cause Cr^{+3} to convert to Cr^{+6} . The chromatographic separation of Cr^{+6} using ion chromatography reduces the potential for other metals to interfere with the post-column reaction. For the IC/PCR analysis, only compounds that coelute with Cr^{+6} and affect the diphenylcarbazide reaction will cause interference. Periodic analyses of reagent water blanks are used to demonstrate that the analytical system is essentially free of contamination. Sample cross-contamination that can occur when high-level and low-level samples or standards are analyzed alternately is eliminated by thorough purging of the sample loop. Purging can easily be achieved by increasing the injection volume of the samples to ten times the size of the sample loop.

3. Apparatus

3.1 Sampling Train. A schematic of the sampling train used in this method is shown in Figure 306-1. The train is the same as Method 5, section 2.1 (40 CFR part 60, appendix A), except that the filter is omitted, and quartz or borosilicate glass must be used for the probe nozzle and liner in place of stainless steel. It is not necessary to heat the probe liner. Probe fittings of plastic such as Teflon, polypropylene, etc. are recommended

over metal fittings to prevent contamination. If desired, a single combined probe nozzle and liner may be used, but such a single glass piece is *not* a requirement of this methodology. Use 0.1 N NaOH or 0.1 N NaHCO₃ in the impingers in place of water.

3.2 Sample Recovery. Same as Method 5, section 2.2 (40 CFR part 60, appendix A), with the following exceptions:

3.2.1 Probe-Liner and Probe-Nozzle Brushes. Brushes are not necessary for sample recovery. If a probe brush is used, it must be nonmetallic.

3.2.2 Sample Recovery Solution. Use 0.1 N NaOH or 0.1 N NaHCO₃, whichever was used as the impinger absorbing solution, in place of acetone to recover the sample.

3.2.3 Sample Storage Containers. Polyethylene, with leak-free screw cap, 500 ml or 1,000 ml.

3.2.4 Filtration Apparatus for IC/PCR. Teflon, or equivalent, filter holder and 0.45 µm acetate, or equivalent, filter.

3.3 Analysis. For analysis, the following equipment is needed.

3.3.1 General.

3.3.1.1 Phillips Beakers. (Phillips beakers are preferred, but regular beakers can also be used.)

3.3.1.2 Hot Plate.

3.3.1.3 Volumetric Flasks. Class A, various sizes as appropriate.

3.3.1.4 Assorted Pipettes.

3.3.2 Analysis by GFAAS.

3.3.2.1 Chromium Hollow Cathode Lamp or Electrodeless Discharge Lamp.

3.3.2.2 Graphite Furnace Atomic Absorption Spectrophotometer.

3.3.3 Analysis by ICP.

3.3.3.1 ICP Spectrometer. Computer-controlled emission spectrometer with background correction and radio frequency generator.

3.3.3.2 Argon Gas Supply. Welding grade or better.

3.3.4 Analysis by IC/PCR.

3.3.4.1 IC/PCR System. High performance liquid chromatograph pump, sample injection valve, post-column reagent delivery and mixing system, and a visible detector, capable of operating at 520 nm, all with a nonmetallic (or inert) flow path. An electronic peak area mode is recommended, but other recording devices and integration techniques are acceptable provided the repeatability criteria and the linearity criteria for the calibration curve described in section 6.4.1 can be satisfied. A sample loading system will be required if preconcentration is employed.

3.3.4.2 Analytical Column. A high performance ion chromatograph (HPIC) nonmetallic column with anion separation characteristics and a high loading capacity designed for separation of metal chelating compounds to prevent metal interference. Resolution described in section 5.5 must be obtained. A nonmetallic guard column with the same ion-exchange material is recommended.

3.3.4.3 Preconcentration Column. An HPIC nonmetallic column with acceptable anion retention characteristics and sample loading rates as described in section 5.5.

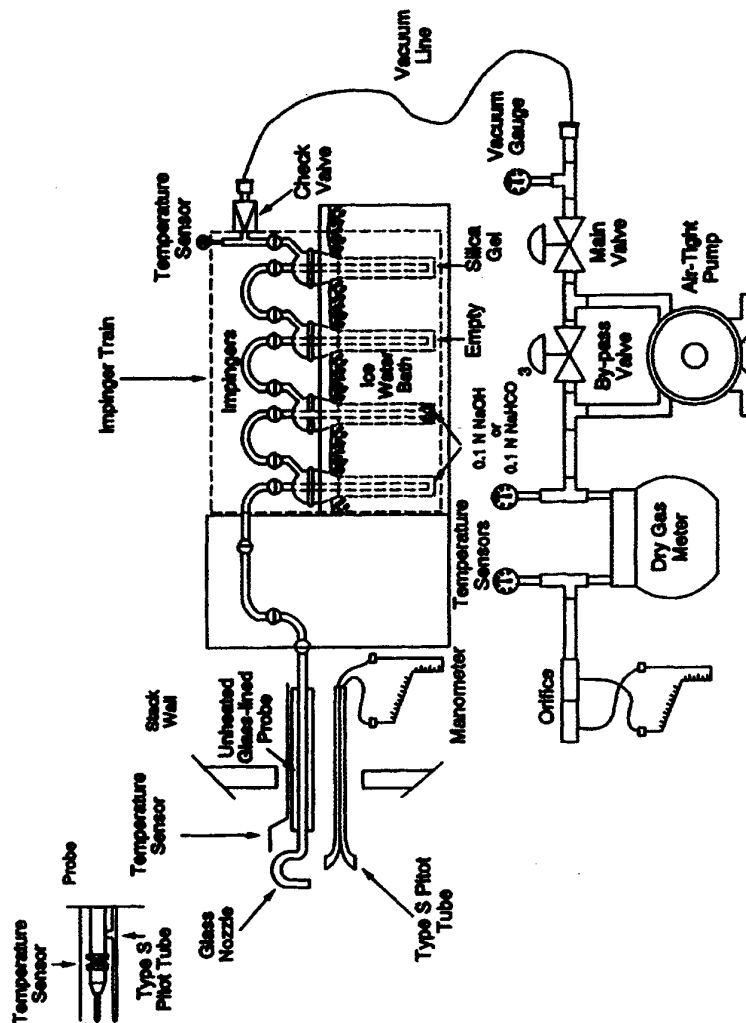


Figure 306-1. Sampling Train Schematic.

3.3.4.4 0.45- μ m Filter Cartridge. For the removal of insoluble material. To be used just prior to sample injection/analysis.

4. Reagents

Unless otherwise indicated, all reagents shall conform to the specifications established by the Committee on Analytical Reagents of the American Chemical Society

(ACS reagent grade). Where such specifications are not available, use the best available grade.

4.1 Sampling.

4.1.1 Water. Reagent water that conforms to ASTM Specification D1193-77, Type II (incorporated by reference—see §63.14). It is recommended that water blanks be checked prior to preparing sampling reagents to ensure that the Cr content is less than the analytical detection limit.

4.1.2 Sodium Hydroxide (NaOH) Absorbing Solution, 0.1 N or Sodium Bicarbonate (NaHCO₃) Absorbing Solution, 0.1 N. Dissolve 4.0 g of sodium hydroxide in 1 l of water, or dissolve 8.5 g of sodium bicarbonate in 1 l of water.

4.2 Sample Recovery.

4.2.1 0.1 N NaOH or 0.1 N NaHCO₃. See section 4.1.2. Use the same solution for recovery as was used in the impingers.

4.2.2 pH Indicator Strip, for IC/PCR. pH indicator capable of determining the pH of solutions between the pH range of 7 and 12, at 0.5 pH intervals.

4.3 Sample Preparation and Analysis.

4.3.1 Nitric Acid (HNO₃), Concentrated, for GFAAS. Trace metals grade or better HNO₃ must be used for reagent preparation. The ACS reagent grade HNO₃ is acceptable for cleaning glassware.

4.3.2 HNO₃, 1.0 percent (v/v), for GFAAS. Add, with stirring, 10 ml of concentrated HNO₃ to 800 ml of water. Dilute to 1,000 ml with water. This reagent shall contain less than 0.001 mg Cr/l.

4.3.3 Calcium Nitrate Ca(NO₃)₂ Solution (10 µg Ca/ml) for GFAAS. Prepare the solution by weighing 36 mg of Ca(NO₃)₂ into a 1 l volumetric flask. Dilute with water to 1 l.

4.3.4 Matrix Modifier, for GFAAS. See instrument manufacturer's manual for suggested matrix modifier.

4.3.5 Chromatographic Eluent, for IC/PCR. The eluent used in the analytical system is ammonium sulfate based. Prepare by adding 6.5 ml of 29 percent ammonium hydroxide (NH₄ OH) and 33 g of ammonium sulfate ((NH₄)₂ SO₄) to 500 ml of reagent water. Dilute to 1 l with reagent water and mix well. Other combinations of eluents and/or columns may be employed provided peak resolution, as described in section 5.5, repeatability and linearity, as described in section 6.4.1, and analytical sensitivity are acceptable.

4.3.6 Post-Column Reagent, for IC/PCR. An effective post-column reagent for use with the chromatographic eluent described in section 4.3.5 is a diphenylcarbazide (DPC) based system. Dissolve 0.5 g of 1,5-diphenylcarbazide in 100 ml of ACS grade methanol. Add 500 ml of reagent water containing 50 ml of 96 percent spectrophotometric grade sulfuric acid. Dilute to 1 l with reagent water.

4.3.7 Chromium Standard Stock Solution (1,000 mg/l). Procure a certified aqueous standard or dissolve 2.829 g of potassium dichromate (K₂ Cr₂ O₇) in water and dilute to 1 l.

4.3.8 Calibration Standards for GFAAS. Chromium solutions for GFAAS calibration shall be prepared to contain 1.0 percent (v/v) HNO₃. The zero standard shall be 1.0 percent (v/v) HNO₃. Calibration standards should be prepared daily by diluting the Cr standard stock solution (section 4.3.7) with 1.0 percent HNO₃. Use at least four standards to make the calibration curve. Suggested levels are 0, 5, 50, and 100 µg Cr/l.

4.3.9 Calibration Standards for ICP or IC/PCR. Prepare calibration standards for ICP or IC/PCR by diluting the Cr standard stock solution (section 4.3.7) with 0.1 N NaOH or 0.1 N NaHCO₃, whichever was used as the impinger absorbing solution, to achieve a matrix similar to the actual field samples. Suggested levels are 0, 25, 50, and 100 µg Cr/l for ICP, and 0, 0.5, 5, and 10 µg Cr⁺⁶/l for IC/PCR.

4.4 Glassware Cleaning Reagents.

4.4.1 HNO₃, Concentrated. The ACS reagent grade or equivalent.

4.4.2 Water. Reagent water that conforms to ASTM Specification D1193-77, Type II, (incorporated by reference—see §63.14).

4.4.3 HNO₃, 10 percent (v/v). Add with stirring 500 ml of concentrated HNO₃ to a flask containing approximately 4,000 ml of water. Dilute to 5,000 ml with water. Mix well. The reagent shall contain less than 2 µg Cr/l.

5. Procedure

5.1 Sampling. (a) Same as Method 5, section 4.1 (40 CFR part 60, appendix A), except omit the filter and filter holder from the sampling train, use a glass nozzle and probe liner, do not heat the probe, place 100 ml of 0.1 N NaOH or 0.1 N NaHCO₃ in each of the first two impingers, and record the data for each run on a data sheet such as the one shown in Figure 306-2.

(b) Clean all glassware prior to sampling in hot soapy water designed for laboratory cleaning of glassware. Next, rinse the glassware three times with tap water, followed by three additional rinses with reagent water. Then soak all glassware in 10 percent (v/v) HNO₃ solution for a minimum of 4 hours, rinse three times with reagent water, and allowed to air dry. Cover all glassware openings where contamination can occur with Parafilm, or equivalent, until the sampling train is assembled for sampling.

(c) If the sample is going to be analyzed for Cr⁺⁶ using IC/PCR, determine the pH of the solution in the first impinger at the end of the sampling run using a pH indicator strip. The pH of the solution should be greater than 8.5. If not, the concentration of the NaOH or NaHCO₃ impinger absorbing solution should be increased to 0.5 N and the sample should be rerun.

5.2 Sample Recovery. Follow the basic procedures of Method 5, section 4.2, with the exceptions noted below; a filter is not recovered from this train.

5.2.1 Container No. 1. Measure the volume of the liquid in the first, second, and third impingers and quantitatively transfer into a labelled sample container. Use approximately 200 to 300 ml of 0.1 N NaOH or 0.1 N NaHCO₃ to rinse the probe nozzle, probe liner, three impingers, and connecting glassware; add this rinse to the same container.

5.2.2 Container No. 2 (Reagent Blank). Place approximately 500 ml of 0.1 N NaOH or 0.1 N NaHCO₃ absorbing solution in a labeled sample container.

5.2.3 Sample Filtration for IC/PCR. If the sample is to be analyzed for Cr⁺⁶ by IC/PCR, it must be filtered immediately following recovery to remove any insoluble matter. Nitrogen gas may be used as a pressure assist to the filtration process. Filter the entire contents of Container No. 1 through a 0.45- μ m acetate filter (or equivalent), and collect the filtrate in a 1,000 ml graduated cylinder. Rinse the sample container with reagent water three separate times, pass these rinses through the filter, and add the rinses to the sample filtrate. Determine the final volume of the filtrate and rinses and return them to the rinsed polyethylene sample container.

5.2.4 Sample Preservation. Refrigerate samples upon receipt. (Containers Nos. 1 and 2).

5.3 Sample Preparation and Analysis for GFAAS. For analysis by GFAAS, an acid di-

gestion of the alkaline impinger solution is required. Two types of blanks are required for the analysis. The calibration blank is used in establishing the analytical curve, and the reagent blank is used to assess possible contamination resulting from the sample processing. The 1.0 percent HNO₃ is the calibration blank. The 0.1 N NaOH solution or the 0.1 N NaHCO₃ from section 5.2.2 is the reagent blank. The reagent blank must be carried through the complete analytical procedure, including the acid digestion, and must contain the same acid concentration in the final solution as the sample solutions.

5.3.1 Acid Digestion for GFAAS. (a) In a beaker, add 10 ml of concentrated HNO₃ to a sample aliquot of 100 ml taken for analysis. Cover the beaker with a watch glass. Place the beaker on a hot plate and reflux the sample down to near dryness. Add another 5 ml of concentrated HNO₃ to complete the digestion. Carefully reflux the sample volume down to near dryness. Wash down the beaker walls and watch glass with reagent water. The final concentration of HNO₃ in the solution should be 1 percent (v/v). Transfer the digested sample to a 50 ml volumetric flask. Add 0.5 ml of concentrated HNO₃, and 1 ml of the 10 μ g/ml of Ca (NO₃)₂.

(b) Dilute to 50 ml with reagent water. A different final volume may be used, based on the expected Cr concentration, but the HNO₃ concentration must be maintained at 1 percent (v/v).

[illegible]

Figure 306-2. Chromium Field Data Sheet.

5.3.2 Sample Analysis by GFAAS. (a) The 357.9-nm wavelength line shall be used. Follow the manufacturer's operating instructions for all other spectrophotometer parameters.

(b) Furnace parameters suggested by the manufacturer should be employed as guidelines. Since temperature-sensing mechanisms and temperature controllers can vary between instruments and/or with time, the validity of the furnace parameters must be periodically confirmed by systematically altering the furnace parameters while analyzing a standard. In this manner, losses of analyte due to higher-than-necessary temperature settings or losses in sensitivity due to less than optimum settings can be minimized. Similar verification of furnace parameters may be required for complex sample matrices. Calibrate the GFAAS system following the procedures specified in section 6.

(c) Inject a measured aliquot of digested sample into the furnace and atomize. If the concentration found exceeds the calibration range, the sample should be diluted with the calibration blank solution (1.0 percent HNO_3) and reanalyzed. Consult the operator's manual for suggested injection volumes. The use of multiple injections can improve accuracy and help detect furnace pipetting errors.

(d) Analyze a minimum of one matrix-matched reagent blank per sample batch to determine if contamination or any memory effects are occurring. Analyze a calibration blank and a midpoint calibration check standard after approximately every 10 sample injections.

(e) Calculate the Cr concentrations:

(1) By the method of standard additions (see operator's manual),

(2) From the calibration curve, or

(3) Directly from the instrument's concentration readout. All dilution or concentration factors must be taken into account. All results should be reported in $\mu\text{g Cr/ml}$ with up to three significant figures.

5.4 Sample Analysis by ICP. (a) The ICP measurement is performed directly on the alkaline impinger solution; acid digestion is not necessary provided the samples and standards are matrix matched. However, ICP should only be used when the solution analyzed has a Cr concentration greater than 35 $\mu\text{g/l}$.

(b) Two types of blanks are required for the analysis. The calibration blank is used in establishing the analytical curve, and the reagent blank is used to assess possible contamination resulting from sample processing. Use either 0.1 N NaOH or 0.1 N NaHCO_3 , whichever was used for the impinger absorbing solution, for the calibration blank. The calibration blank can be prepared fresh in the laboratory; it does not have to be from the same batch of solution that was used in the field. Prepare a sufficient quantity to flush the system between standards and samples. The reagent blank (section 5.2.2) is a sample of the impinger solution used for sample collection that is collected in the field during the testing program.

(c) Set up the instrument with proper operating parameters including wavelength, background correction settings (if necessary), and interfering element correction settings (if necessary). The instrument must be allowed to become thermally stable before beginning performance of measurements (usually requiring at least 30 min of operation prior to calibration). During this warmup period, the optical calibration and torch position optimization may be performed (consult the operator's manual).

(d) Calibrate the instrument according to the instrument manufacturer's recommended procedures, and the procedures specified in section 6.3. Before analyzing the samples, reanalyze the highest calibration standard as if it were a sample. Concentration values obtained should not deviate from the actual values by more than 5 percent, or the established control limits, whichever is lower (see sections 6 and 7). If they do, follow the recommendations of the instrument manufacturer to correct for this condition.

(e) Flush the system with the calibration blank solution for at least 1 min before the analysis of each sample or standard. Analyze the midpoint calibration standard and the calibration blank after each 10 samples. Use the average intensity of multiple exposures for both standardization and sample analysis to reduce random error.

(f) Dilute and reanalyze samples that are more concentrated than the linear calibration limit or use an alternate, less sensitive Cr wavelength for which quality control data are already established.

(g) If dilutions are performed, the appropriate factors must be applied to sample values. All results should be reported in $\mu\text{g Cr/ml}$ with up to three significant figures.

5.5 Sample Analyses by IC/PCR. (a) The Cr^{+6} content of the sample filtrate is determined by IC/PCR. To increase sensitivity for trace levels of chromium, a preconcentration system is also used in conjunction with the IC/PCR.

(b) Prior to preconcentration and/or analysis, filter all field samples through a 0.45- μm filter. This filtration should be conducted just prior to sample injection/analysis.

(c) The preconcentration is accomplished by selectively retaining the analyte on a solid absorbent (as described in section 3.4.3.3), followed by removal of the analyte from the absorbent. Inject the sample into a sample loop of the desired size (use repeated loadings or a larger size loop for greater sensitivity). The Cr^{+6} is collected on the resin bed of the column. Switch the injection valve so that the eluent displaces the concentrated Cr^{+6} sample, moving it off the preconcentration column and onto the IC anion separation column. After separation from other sample components, the Cr^{+6} forms a specific complex in the post-column reactor with the DPC reaction solution, and

the complex is detected by visible absorbance at a wavelength of 520 nm. The amount of absorbance measured is proportional to the concentration of the Cr^{+6} complex formed. Compare the IC retention time and the absorbance of the Cr^{+6} complex with known Cr^{+6} standards analyzed under identical conditions to provide both qualitative and quantitative analyses.

(d) Two types of blanks are required for the analysis. The calibration blank is used in establishing the analytical curve, and the reagent blank is used to assess possible contamination resulting from sample processing. Use either 0.1 N NaOH or 0.1 N NaHCO_3 , whichever was used for the impinger solution, for the calibration blank. The calibration blank can be prepared fresh in the laboratory; it does not have to be from the same batch of solution that was used in the field. The reagent blank (section 5.2.2) is a sample of the impinger solution used for sample collection that is collected in the field during the testing program.

(e) Prior to sample analysis, establish a stable baseline with the detector set at the required attenuation by setting the eluent flow rate at approximately 1 ml/min and the post-column reagent flow rate at approximately 0.5 ml/min. Note: As long as the ratio of eluent flow rate to PCR flow rate remains constant, the standard curve should remain linear. Inject a sample of reagent water to ensure that no Cr^{+6} appears in the water blank.

(f) First, inject the calibration standards prepared, as described in section 4.3.9 to cover the appropriate concentration range, starting with the lowest standard first. Next, inject, in duplicate, the calibration reference standard (as described in section 7.3.1), followed by the reagent blank (section 5.2.2), and the field samples. Finally, repeat the injection of the calibration standards to assess instrument drift. Measure areas or heights of the Cr^{+6} /DPC complex chromatogram peaks. The response for replicate, consecutive injections of samples must be within 5 percent of the average response, or the injection should be repeated until the 5 percent criterion can be met. Use the average response (peak areas or heights) from the duplicate injections of calibration standards to generate a linear calibration curve. From the calibration curve, determine the concentrations of the field samples employing the average response from the duplicate injections.

6. Calibration

6.1 Sampling Train Calibration. Perform all of the calibrations described in Method 5, section 5 (40 CFR part 60, appendix A). The alternate calibration procedures described in section 7 of Method 5 (40 CFR part 60, appendix A) may also be used.

6.2 GFAAS Calibration. Either run a series of chromium standards and a calibration

blank and construct a calibration curve by plotting the concentrations of the standards against the absorbencies, or using the method of standard additions, plot added concentration versus absorbance. For instruments that read directly in concentration, set the curve corrector to read out the proper concentration, if applicable. This is customarily performed automatically with most instrument computer-based data systems.

6.2.1 GFAAS Calibration Curve. If a calibration curve is used, it should be prepared daily with a minimum of a calibration blank and three standards. Calibration standards for total chromium should start with 1 percent v/v HNO_3 with no chromium for the calibration blank, with appropriate increases in total chromium concentration for the other calibration standards (see section 4.3.9). Calibration standards should be prepared fresh daily.

6.3 ICP Calibration. Calibrate the instrument according to the instrument manufacturer's recommended procedures, using a calibration blank and three standards for the initial calibration. Calibration standards should be prepared fresh daily, as described in section 4.3.9. Be sure that samples and calibration standards are matrix matched. Flush the system with the calibration blank between each standard. Use the average intensity of multiple exposures for both standardization and sample analysis to reduce random error.

6.4 IC/PCR Calibration. Prepare a calibration curve using the calibration blank and three calibration standards prepared fresh daily as described in section 4.3.9. Run the standards with the field samples as described in section 5.5.

7. Quality Control

7.1 GFAAS Quality Control

7.1.1 GFAAS Calibration Reference Standards. If a calibration curve is used, it must be verified by use of at least one calibration reference standard (made from a reference material or other independent standard material) at or near the mid-range of the calibration curve. The calibration reference standard must be measured within 10 percent of its true value for the curve to be considered valid. The curve must be validated before sample analyses are performed.

7.1.2 GFAAS Check Standards. (a) Run a check standard and a calibration blank after approximately every 10 sample injections, and at the end of the analytical run. These standards are run, in part, to monitor the life and performance of the graphite tube. Lack of reproducibility or a significant change in the signal for the check standard indicates that the graphite tube should be replaced. Check standards can be the mid-range calibration standard or the reference standard. The results of the check standard shall agree within 10 percent of the expected

value. If not, terminate the analyses, correct the problem, recalibrate the instrument, and reanalyze all samples analyzed subsequent to the last acceptable check standard analysis.

(b) The results of the calibration blank are to agree within three standard deviations of the mean blank value. If not, repeat the analysis two more times and average the results. If the average is not within three standard deviations of the background mean, terminate the analyses, correct the problem, recalibrate, and reanalyze all samples analyzed subsequent to the last acceptable calibration blank analysis.

7.1.3 GFAAS Duplicate Samples. Run one duplicate sample for every 20 samples, (or one per source test, whichever is more frequent). Duplicate samples are brought through the whole sample preparation and analytical process separately. Duplicate samples shall agree within 10 percent.

7.1.4 GFAAS Matrix Spiking. Spiked samples shall be prepared and analyzed daily to ensure that correct procedures are being followed and that all equipment is operating properly. Spiked sample recovery analyses should indicate a recovery for the Cr spike of between 75 and 125 percent. Spikes are added prior to any sample preparation. Cr levels in the spiked sample should provide final solution concentrations that fall within the linear portion of the calibration curve.

7.1.5 GFAAS Method of Standard Additions. Whenever sample matrix problems are suspected and standard/sample matrix matching is not possible or whenever a new sample matrix is being analyzed, the method of standard additions shall be used for the analysis of all extracts. Section 5.4.2 of Method 12 (40 CFR part 60, appendix A) specifies a performance test to determine if the method of standard additions is necessary.

7.1.6 GFAAS Reagent Blank Samples. Analyze a minimum of one matrix-matched reagent blank (section 5.2.2) per sample batch to determine if contamination or memory effects are occurring. The results should agree within three standard deviations of the mean blank value.

7.2 ICP Quality Control.

7.2.1 ICP Interference Check. Prepare an interference check solution to contain known concentrations of interfering elements that will provide an adequate test of the correction factors in the event of potential spectral interferences. Two potential interferences, iron and manganese, may be prepared as 1,000 µg/ml and 200 µg/ml solutions, respectively. The solutions should be prepared in dilute HNO₃ (1-5 percent). Particular care must be taken to ensure that the solutions and/or salts used to prepare the solutions are of ICP grade purity (i.e., that no measurable Cr contamination exists in the salts/solutions). Commercially prepared interfering element check standards are available. Verify the interelement correction

factors every three months by analyzing the interference check solution. The correction factors are calculated according to the instrument manufacturer's directions. If interelement correction factors are used properly, no false Cr should be detected.

7.2.2 ICP Calibration Reference Standards. Prepare a calibration reference standard in the same alkaline matrix as the calibration standards; it should be at least 10 times the instrumental detection limit. This reference standard should be prepared from a different Cr stock solution source than that used for preparation of the calibration curve standards and is used to verify the accuracy of the calibration curve. Prior to sample analysis, analyze at least one reference standard. The calibration reference standard must be measured within 10 percent of its true value for the curve to be considered valid. The curve must be validated before sample analyses are performed.

7.2.3 ICP Check Standards. Run a check standard and a calibration blank after every 10 samples, and at the end of the analytical run. Check standards can be the mid-range calibration standard or the reference standard. The results of the check standard shall agree within 10 percent of the expected value; if not, terminate the analyses, correct the problem, recalibrate the instrument, and rerun all samples analyzed subsequent to the last acceptable check standard analysis. The results of the calibration blank are to agree within three standard deviations of the mean blank value. If not, repeat the analysis two more times and average the results. If the average is not within three standard deviations of the background mean, terminate the analyses, correct the problem, recalibrate, and reanalyze all samples analyzed subsequent to the last acceptable calibration blank analysis.

7.2.4 ICP Duplicate Samples. Analyze one duplicate sample for every 20 samples, (or one per source test, whichever is more frequent). Duplicate samples are brought through the whole sample preparation and analytical process. Duplicate samples shall agree within 10 percent.

7.2.5 ICP Reagent Blank Samples. Analyze a minimum of one matrix-matched reagent blank (section 5.2.2) per sample batch to determine if contamination or memory effects are occurring. The results should agree within three standard deviations of the mean blank value.

7.3 IC/PCR Quality Control.

7.3.1 IC/PCR Calibration Reference Standards. Prepare a calibration reference standard in the same alkaline matrix as the calibration standards at a concentration that is at or near the mid-point of the calibration curve. This reference standard should be prepared from a different Cr stock solution source than that used for preparing the calibration curve standards. The reference

standard is used to verify the accuracy of the calibration curve. Prior to sample analysis, analyze at least one reference standard. The results of this analysis of the reference standard must be within 10 percent of the true value of the reference standard for the calibration curve to be considered valid. The curve must be validated before sample analyses are performed.

7.3.2 IC/PCR Check Standards. (a) Run the calibration blank and calibration standards with the field samples as described in section 5.5. For each standard, determine the peak areas (recommended) or the peak heights, calculate the average response from the duplicate injections, and plot the average response against the Cr+6 concentration in $\mu\text{g/l}$. The individual responses for each calibration standard determined before and after field sample analysis must be within 5 percent of the average response for the analysis to be valid. If the 5 percent criteria is exceeded, excessive drift and/or instrument degradation may have occurred, and must be corrected before further analyses are performed.

(b) Employing linear regression, calculate a predicted value for each calibration standard using the average response for the duplicate injections. Each predicted value must be within 7 percent of the actual value for the calibration curve to be considered acceptable. If not acceptable, remake and/or rerun the calibration standards. If the calibration curve is still unacceptable, reduce the range of the curve.

7.3.3 IC/PCR Duplicate Samples. Analyze one duplicate sample for every 20 samples, (or one per source test, whichever is more frequent). Duplicate samples are brought through the whole sample preparation and analytical process. Duplicate samples shall agree within 10 percent.

7.3.4 ICP Reagent Blank Samples. Analyze a minimum of one matrix-matched reagent blank (section 5.2.2) per sample batch to determine if contamination or memory effects are occurring. The results should agree within three standard deviations of the mean blank value.

8. Emission Calculations

Carry out the calculations, retaining one extra decimal figure beyond that of the acquired data. Round off figures after final calculations.

8.1 Total Cr in Sample. Calculate M_{Cr} , the total μg Cr in each sample, as follows:

$$M_{Cr} = (V_{ml}) (C_s) (F) (D) \quad \text{Eq. 306-1}$$

where:

V_{ml} = Volume of impinger contents plus rinses, ml.

C_s = Concentration of Cr in sample solution, μg Cr/ml.

F = Dilution factor.

= Volume of aliquot after dilution, ml; Volume of aliquot before dilution, ml

D = Digestion factor.

= Volume of sample aliquot after digestion, ml; Volume of sample aliquot submitted to digestion, ml

8.2 Average Dry Gas Meter Temperature and Average Orifice Pressure Drop. Same as Method 5, section 6.2.

8.3 Dry Gas Volume, Volume of Water Vapor, Moisture Content. Same as Method 5, sections 6.3, 6.4, and 6.5, respectively.

8.4 Cr Emission Concentration. Calculate C_{Cr} , the Cr concentration in the stack gas, in mg/dscm on a dry basis, corrected to standard conditions, as follows:

$$C_{Cr} = (10^{-3} \text{ mg}/\mu\text{g}) (M_{Cr}/V_{m(\text{std})}) \quad \text{Eq. 306-2}$$

where:

$V_{m(\text{std})}$ = Gas sample volume measured by the dry gas meter, corrected to dry standard conditions, dscm.

8.5 Isokinetic Variation, Acceptable Results. Same as Method 5, sections 6.11 and 6.12, respectively.

9. Bibliography

1. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U. S. Environmental Protection Agency Publication SW-846, 2nd Edition, July 1982.
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3. Same as Bibliography of Method 5, Citations 2 to 5 and 7.
4. California Air Resources Board, "Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources," Method 425, September 12, 1990.
5. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", U.S. Environmental Protection Agency Publication SW-846, 3rd Edition, November 1986 as amended by Update I, November 1990.

METHOD 306A—DETERMINATION OF CHROMIUM EMISSIONS FROM DECORATIVE AND HARD CHROMIUM ELECTROPLATING AND ANODIZING OPERATIONS

1. Applicability and Principle

1.1 Applicability. This method applies to the determination of chromium (Cr) in emissions from decorative and hard chromium electroplating facilities and anodizing operations. The method is less expensive and less complex to conduct than Method 306 of this appendix. Correctly applied, the precision and bias of the sample results will be comparable to those obtained with the isokinetic Method 306 of this appendix. This method is applicable under ambient moisture, air, and temperature conditions.

1.2 Principle. A sample is extracted from the source at a constant sampling rate determined by a critical orifice and collected in a probe and impingers. The sampling time at the sampling traverse points is varied according to the stack gas velocity at each point to obtain a proportional sample. The concentration is determined by the same analytical procedures used in Method 306 of this appendix: inductively-coupled plasma emission spectrometry (ICP), graphite furnace atomic absorption spectrometry (GFAAS), or ion chromatography with a post-column reactor (IC/PCR).

2. Range, Sensitivity, Precision, and Interferences

Same as Method 306, section 2 of this appendix.

3. Apparatus

Note: Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency.

3.1 Sampling Train. A schematic of the sampling train is shown in Figure 306A-1. The components of the train are available commercially, but some fabrication and assembly are required. If Method 306 equipment is available, the sampling train may be assembled as specified in Method 306 of this appendix and the sampling rate of the meter box set at the delta H_{ϕ} specified for the calibrated orifice; this train is then operated as specified in this method.

3.1.1 Probe Nozzle/Tubing and Sheath. Use approximately 1/4 in. inside diameter (ID) glass or rigid plastic tubing about 8 in. long with a short 90° bend at one end to form the nozzle. Grind a slight taper on the nozzle end before making the bend. Attach the nozzle to flexible tubing of sufficient length to collect a sample from the stack. Use a straight piece of larger diameter rigid tubing (such as metal conduit or plastic water pipe) to form a sheath that begins about 1 in. from the 90° bend on the nozzle and encases the flexible tubing.

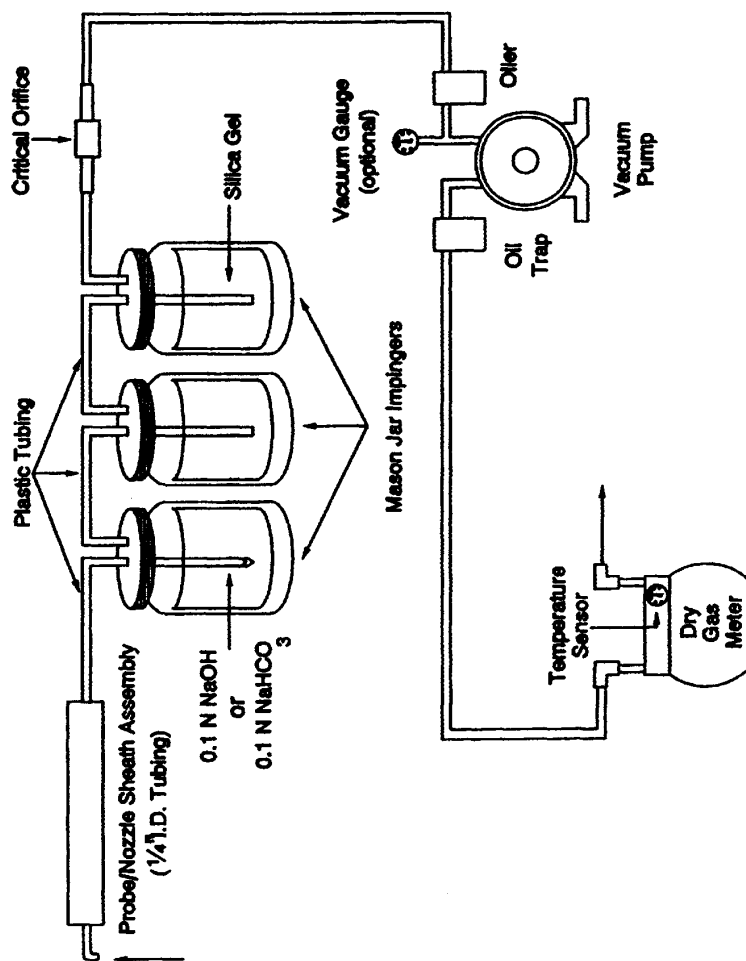


Figure 306A-1. Sampling Train Schematic.

3.1.2 S-Type Pitot. Same as Method 2, section 3 (40 CFR part 60, appendix A).

3.1.3 Sample Line. Use thick wall flexible plastic tubing (e.g., polyethylene, polypropylene, or polyvinylchloride) about $\frac{1}{4}$ in. to $\frac{3}{8}$ in. ID to connect the train components. A combination of rigid plastic tubing and thin wall flexible tubing may be used as long as neither tubing collapses when leak-checking the train. Metal tubing cannot be used.

3.1.4 Impingers. One quart capacity "Mason" glass canning jars with vacuum

seal lids are used. Three impingers are required: the first is for collecting the pollutant in the absorbing solution, the second is empty and is used to collect any absorbing solution carried over from the first impinger, and the third contains the drying agent. Install leak-tight inlet and outlet tubes in the lids of each impinger for assembly with the train. The tubes may be made of approximately $\frac{1}{4}$ in. ID glass or rigid plastic tubing. For the inlet tube of the first impinger, heat the glass or plastic tubing and

draw until the tubing separates. Cut the tip off until the tip orifice is $\frac{3}{32}$ in. in diameter. When fabricating the first impinger, place the tip orifice $\frac{3}{16}$ in. above the bottom of the jar when assembled. For the second impinger, the inlet tube need not be drawn and sized, but the tip should be approximately 2 in. above the bottom of the jar. The inlet tube of the third impinger should extend to about $\frac{1}{2}$ in. above the bottom of the jar. Locate the outlet tube end of all impingers about $\frac{1}{2}$ in. beneath the bottom of the lid.

3.1.5 Manometer. Inclined/vertical type, or equivalent device, as described in section 2.2 of Method 2 (40 CFR part 60, appendix A).

3.1.6 Critical Orifice. The critical orifice is a small restriction in the sample line (approximately $\frac{1}{16}$ in. in diameter) that is located upstream of the vacuum pump and sets the sample rate at about 0.75 cfm. An orifice can be made of $\frac{3}{32}$ in. brass tubing approximately $\frac{3}{16}$ in. long sealed inside larger diameter, approximately $\frac{5}{16}$ in., brass tubing to serve as a critical orifice giving a constant sample flow. Materials other than brass can be used to construct the critical orifice as long as the flow through the sampling train is approximately 0.75 cfm.

3.1.7 Connecting Hardware. Standard pipe and fittings, $\frac{1}{4}$ in. or $\frac{1}{8}$ in., are used to install the vacuum pump and dry gas meter in the sampling train.

3.1.8 Pump Oiler. A glass oil reservoir with a wick mounted at the vacuum pump inlet lubricates the pump vanes. The oiler should be an inline type and not vented to the atmosphere.

3.1.9 Vacuum Pump. Gast Model 0522-V103-G18DX, or equivalent, capable of delivering at least 1.5 cfm at 15 in. Hg vacuum.

3.1.10 Oil Trap. An empty glass oil reservoir without wick is mounted at pump outlet to prevent oil from reaching the dry gas meter.

3.1.11 Dry Gas Meter. A Rockwell model 175-s test meter, or equivalent, with a thermometer installed to monitor meter temperature. The dry gas meter must be capable of measuring volume to within 2 percent.

3.2 Sample Recovery.

3.2.1 Wash Bottles. These are glass or inert plastic, 500 or 1000 ml, with spray tube.

3.2.2 Sample Containers. The first mason jar impinger of the sampling train serves as the sample container. A new lid and plastic wrap are substituted for the impinger inlet/outlet assembly.

3.3 Analysis. Same as Method 306, section 3.3 of this appendix.

4. Reagents

4.1 Sampling. Same as Method 306, section 4.1 of this appendix.

4.2 Sample Recovery. Same as Method 306, section 4.2 of this appendix.

5. Procedure

5.1 Sampling.

5.1.1 Pretest Preparation.

5.1.1.1 Port Location. Locate the sampling ports as specified in section 2.1 of Method 1 (40 CFR part 60, appendix A). Use a total of 24 sampling points for round ducts and 25 points for rectangular ducts. Locate the sampling points as specified in section 2.3 of Method 1 (40 CFR part 60, Appendix A). Mark the pitot and sampling probe with thin strips of tape to permit velocity pressure and sample traversing. For ducts less than 12 in. in diameter, use a total of 16 points.

5.1.1.2 Velocity Pressure Traverse. (a) Perform a velocity pressure traverse before the first sample run. Figure 306A-2 may be used to record velocity pressure data. If testing occurs over several days, perform the traverse at the beginning of each day. Perform velocity pressure traverses as specified in section 3 of Method 2 (40 CFR part 60, appendix A), but record only the Δp (velocity head) values for each sampling point.

(b) Check for cyclonic flow during the first traverse to verify that it does not exist; if cyclonic flow does exist, make sure that the absolute average angle of misalignment does not exceed 20° . If the average angle of misalignment exceeds 20° at an outlet location, install straightening vanes to eliminate the cyclonic flow. If it is necessary to test an inlet location where cyclonic flow exists, it may not be possible to install straightening vanes. In this case, a variation of the alignment method must be used. This must be approved by the Administrator.

Plant _____
Date _____ Time _____
Location _____
Operator(s) _____
Beginning stack temperature, °F _____
Ending stack temperature, °F _____
Average stack temperature, °F _____

Circle one:

After Run No.

[illegible]

Figure 306A-2. Velocity Traverse and Point Sample Time Calculation Sheet.

all sampling can be completed in a single day, it is necessary to calculate the point sampling times only once. If sampling occurs over several days, recalculate the point sample times each day. Determine the average of

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the Δp values obtained during the traverse (Figure 306A-2). Calculate the sampling times for each point using Equation 306A-1. Convert the decimal parts of minutes to sec-

onds. If the stack diameter is less than 12 in., use 7.5 minutes in place of 5 minutes in the equation and 16 sampling points.

$$\text{Minutes at point } n = \frac{\sqrt{\text{Point } n \Delta p}}{(\sqrt{\Delta p})_{\text{avg}}} \times 5 \text{ minutes} \quad \text{Eq. 306A-1}$$

Where:

n=Sampling point number.

Δp =Velocity head measured by Type-S pitot tube, in. H_2O

5.1.1.4 Preparation of Sampling Train. Assemble the sampling train as shown in Figure 306A-1. Secure the nozzle-liner assembly to the sheath to prevent slipping when sampling. Before charging, rinse the first mason jar impinger with either 0.1 N sodium hydroxide (NaOH) or 0.1 N sodium bicarbonate ($NaHCO_3$); discard the solution. Put 250 ml of 0.1 N NaOH or 0.1 N $NaHCO_3$ absorbing solution into the first mason jar impinger. Similarly, rinse the second mason jar impinger and leave empty. Put silica gel into the third mason jar impinger until the impinger is

half full. Place the impingers into an ice bath and check to ensure that the lids are tight.

5.1.1.5 Train Leak Check Procedure. Wait until the ice has cooled the impingers. Next, seal the nozzle with a finger covered by a piece of clear plastic wrap and turn on the pump. The vacuum in the line between the pump and the critical orifice must be at least 15 in. Hg. Observe any leak rate on the dry gas meter. The leak rate should not exceed 0.02 cfm.

5.1.2 Sampling Train Operation.

5.1.2.1 Record all pertinent process and sampling data on the data sheet (see Figure 306A-3). Ensure that the process operation is suitable for sample collection.

Plant _____	Date _____ Run Number _____
Sampling Site _____	Operator _____
Total Cr catch, M_{Cr} , μg _____	Stack radius, r , in. _____
Avg dry gas meter temp, T_m , $^{\circ}\text{F}$ _____	Avg sq. rt. Δp , $(\sqrt{\Delta p})_{avg}$, in. H_2O _____
Meter correction factor, Y_m _____	Stack temp, T_s , $^{\circ}\text{F}$ _____
Meter volume, V_m , ft^3 _____	Leak rate before run, cfm _____
Barometric press, P_{bar} , in. Hg _____	Leak rate after run, cfm _____
Start clock time _____	Stop meter volume, ft^3 _____
Stop clock time _____	Start meter volume, ft^3 _____

REMARKS: _____

Point No.	Sample (Min/Sec)	Gas Meter Temp ($^{\circ}\text{F}$)

Point No.	Sample (Min/Sec)	Gas Meter Temp ($^{\circ}\text{F}$)

$$C_{Cr} = \frac{(M_{Cr}) (T_m + 460)}{(499.8) (Y_m) (V_m) (P_{bar})}$$

$$\text{kg/hr} = (C_{Cr}) (0.0001597) (r^2) (\sqrt{\Delta p})_{avg} \sqrt{\frac{(T_s + 460)}{(P_{bar}) (28.73)}}$$

mg/cubic meter, (C_p) _____

(Optional) kg/hr _____

Figure 306A-3. Chromium Constant Sampling Rate Field Data Sheet.

5.1.2.2 Place the probe/nozzle into the duct at the first sampling point and seal the port. Turn on the pump. A minimum vacuum of 15 in. Hg or 0.47 atmosphere between the critical orifice and pump is required to maintain

critical flow. Sample for the time interval previously determined for that point. Move to the second point and sample for the time interval determined for that point; sample all points on the traverse in this manner.

Keep ice around the impingers during the run. Complete the traverse and turn off the pump. Move to the next sampling port and repeat. Record the final dry gas meter reading. (NOTE: If an approximate mass emission rate is desired, record the stack temperature before and after the run.)

5.1.2.3 Post Test Leak Check. Remove the probe assembly and flexible tubing from the first impinger. Do not cover the nozzle. Seal the inlet tube of the first impinger with a finger covered by clear plastic wrap and turn on the pump. The vacuum in the line between the pump and the critical orifice must be at least 15 in. Hg. Observe any leak rate on the dry gas meter. If the leak rate exceeds 0.02 cfm, reject the run. If the leak rate is acceptable, take the probe assembly and impinger assembly to the sample recovery area.

5.2 Sample Recovery.

5.2.1 Container No. 1. (a) After the train has been moved to the sample recovery area, disconnect the tubing that joins the first impinger with the second.

(b) The first impinger jar is also used as the sample container jar. Unscrew the lid from the first impinger jar. Lift the inlet/outlet tube assembly almost out of the jar, and using the wash bottle, rinse the outside of the impinger tip that was immersed in the impinger jar with extra absorbing solution; rinse the inside of the tip as well.

(c) Recover the second impinger by removing the lid and pouring any contents from the second impinger into the first impinger. Rinse the second impinger including the inside and outside of the impinger stem as well as any connecting plastic tubing with extra absorbing solution and place the rinse into the first impinger.

(d) Hold the nozzle and connecting plastic tubing in a vertical position so that the tubing forms a "U." Using the wash bottle, partially fill the tubing with sampling reagent. Raise and lower the end of the plastic tubing several times to cause the reagent to contact the major portion of the internal parts of the assembly thoroughly. Do not raise the solution level too high or part of the sample will be lost. Place the nozzle end of the assembly over the mouth of the first impinger jar (sample container) and elevate the plastic tubing so that the solution flows rapidly out of the nozzle. Perform this procedure three times. Next, repeat the recovery procedure but allow the solution to flow rapidly out the open end of the plastic tubing into the first impinger jar.

(e) Place a piece of clear plastic wrap over the mouth of the first impinger jar. Use a standard lid and band assembly to seal the jar. Label the jar with the sample number and mark the liquid level to gauge any losses during handling.

5.2.2 Container No. 2 (Reagent Blank). Place approximately 500 ml of the 0.1 N

NaOH or 0.1 N NaHCO₃ absorbing solution in a labeled sample container.

5.2.3 Sample Filtration for IC/PCR. If the sample is to be analyzed for Cr⁺⁶ by IC/PCR, it must be filtered immediately following recovery as described in section 5.2.3 of Method 306 of this appendix.

5.3 Analysis. Sample preparation and analysis procedures are identical to Method 306, section 5.3 of this appendix.

6. Calibration

6.1 Dry Gas Meter. (a) Dry gas meter calibrations may be performed by either the manufacturer, a firm who provides calibration services, or the tester. The dry gas meter calibration coefficient (Y_m) must be determined prior to initial use of the meter, and must be checked following each field use.

(b) If the dry gas meter is new, the manufacturer will have specified the Y_m for the meter. The manufacturer may also have included a calibration orifice and a data sheet with the meter that may be used for calibration purposes. The sheet will specify a standard cubic foot volume and a sample time, and these values were determined when the orifice was used to set the initial Y_m for the meter. The Y_m may be checked by disconnecting the critical orifice in the sampling train and replacing it with the calibration orifice. The inlet side of the calibration orifice is open to the atmosphere and is not reconnected to the sample train. Record the initial dry gas meter volume and meter temperature. Turn on the pump and operate it for the number of minutes specified by the manufacturer's data sheet. Stop the pump and record the final dry gas meter volume and temperature. Subtract the start volume from the stop volume and average the temperatures. Check the Y_m for the dry gas meter after the test by using the following equation:

$$Y = \frac{Ft.^3_m (T_m + 460)}{17.647 (Ft.^3_{pt}) (P_{bar})}$$

Where:

Ft.³_m=Cubic feet given by meter manufacturer

T_m=Temperature of meter in degrees Fahrenheit

Ft.³_{pt}=Cubic feet from dry gas meter, post test

P_{bar}=Barometric pressure in inches of mercury

Compare the Y_m just calculated with the Y_m given by the manufacturer:

$$\frac{Y_m (\text{manufacturer})}{Y_m (\text{calculated after test})}$$

If this value is between 0.95 and 1.05, the Y_m of the meter is acceptable. If the value lies outside the specified range, the test series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before and after) that gives the lower value of total sample volume. Return the dry gas meter to the manufacturer for recalibration. The calibration may also be conducted as specified in section 5.3.1 or section 7 of Method 5 (40 CFR part 60, appendix A), except that it is only necessary to check the calibration at an approximate flow rate of 0.75 cfm. The calibration of the dry gas meter must be checked after each field use in the same manner. If the values of Y_m obtained before and after a test series differ by more than 5%, the test

series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before or after) that gives the lower value of total sample volume.

6.2 GFAA Spectrometer. Same as Method 306, section 6.2 of this appendix.

6.3 ICP Spectrometer. Same as Method 306, section 6.3 of this appendix.

7. Quality Control

Same as Method 306, section 7 of this appendix.

8. Calculations

8.1 Pollutant Concentration. Calculate C_{Cr} , the Cr concentration in the stack gas, in mg/dscm on a dry basis as follows:

$$C_{Cr} = \frac{(M_{Cr})(T_m + 460)}{(499.8)(Y_m)(V_m)(P_{bar})} \quad \text{Eq.306A-2}$$

where:

M_{Cr} =Amount of Cr in sample from Method 306 of this appendix, Eq. 306-1, μg .

T_m =Dry gas meter temperature, $^{\circ}\text{F}$.

Y_m =Dry gas meter correction factor, dimensionless.

V_m =Dry gas meter volume, ft^3 .

P_{bar} =Barometric pressure, in. Hg.

8.2 Approximate Mass Emission Rate (Optional). Calculate an approximate mass emission rate of Cr in kg/hr using the following equation:

$$\text{kg/hr} = (0.0001597)(C_{Cr})(r^2)(\sqrt{\Delta p})_{avg} \sqrt{\frac{(T_s + 460)}{(P_{bar})(28.73)}} \quad \text{Eq.306A-3}$$

where:

r =Radius of stack, in.

$(\Delta p)_{avg}$ =Average of Δp values.

T_s =Stack temperature, $^{\circ}\text{F}$.

P_{bar} =Barometric pressure, in. Hg.

C_{Cr} =Concentration of Cr, mg/dscm.

NOTE: The emission rate calculated using Equation 306A-3 is based on an assumed moisture content of 2%.

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METHOD 306-B—SURFACE TENSION MEASUREMENT AND RECORDKEEPING FOR CHROMIUM PLATING TANKS USED AT ELECTROPLATING AND ANODIZING FACILITIES**1. Applicability and Principle**

1.1 Applicability. This method is applicable to all decorative plating and anodizing operations where a wetting agent is used in the tank as the primary mechanism for reducing emissions from the surface of the solution.

1.2 Principle. During an electroplating or anodizing operation, gas bubbles generated during the process rise to the surface of the tank liquid and burst. Upon bursting, tiny droplets of chromic acid become entrained in ambient air. The addition of a wetting agent to the tank bath reduces the surface tension of the liquid and diminishes the formation of these droplets.

2. Apparatus

2.1 Stalagmometer. Any commercially available stalagmometer or equivalent surface tension measuring device may be used to measure the surface tension of the plating or anodizing tank liquid.

2.2 Tensiometer. A tensiometer may be used to measure the surface tension of the tank liquid provided the procedures specified in ASTM Method D 1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents (incorporated by reference—see §63.14) are followed.

3. Procedure

3.1 The surface tension of the tank bath may be measured by using a tensiometer, a stalagmometer or any other device suitable for measuring surface tension in dynes per centimeter. If the tensiometer is used, the instructions given in ASTM Method D 1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents (incorporated by reference—see §63.14) must be followed. If a stalagmometer or other device is used to measure surface tension, the instructions that came with the measuring device must be followed.

3.2 (a) Measurements of the bath surface tension are done using a progressive system which minimizes the number of surface tension measurements required when the proper surface tension is maintained. Initially, measurements must be made every 4 hours of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances during 40 hours of tank operation, measurements may be conducted once every 8 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, measurements may be conducted once every 40 hours of tank operation on an on-going basis, until an ex-

ceedance occurs. The maximum time interval for measurements is once every 40 hours of tank operation.

(b) If a measurement of the surface tension of the solution is above the 45 dynes per centimeter limit, the time interval reverts back to the original monitoring schedule of once every 4 hours. A subsequent decrease in frequency would then be allowed according to the previous paragraph.

4. Recordkeeping

4.1 Log book of surface tension measurements and fume suppressant additions. The surface tension of the plating or anodizing tank bath must be measured as specified in section 3.2. The measurements must be recorded in the log book. In addition to the record of surface tension measurements, the frequency of fume suppressant maintenance additions and the amount of fume suppressant added during each maintenance addition will be recorded in the log book. The log book will be readily available for inspection by regulatory personnel.

4.2 Instructions for apparatus used in measuring surface tension. Also included with the log book must be a copy of the instructions for the apparatus used for measuring the surface tension of the plating or anodizing bath. If a tensiometer is used, a copy of ASTM Method D 1331-89, Standard Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents (incorporated by reference—see §63.14) must be included with the log book.

METHOD 307—DETERMINATION OF EMISSIONS FROM HALOGENATED SOLVENT VAPOR CLEANING MACHINES USING A LIQUID LEVEL PROCEDURE**1. Applicability and Principle**

1.1 Applicability. This method is applicable to the determination of the halogenated solvent emissions from solvent vapor cleaners in the idling mode.

1.2 Principle. The solvent level in the solvent cleaning machine is measured using inclined liquid level indicators. The change in liquid level corresponds directly to the amount of solvent lost from the solvent cleaning machine.

2. Apparatus

NOTE: Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency.

2.1 Inclined Liquid Level Indicator. A schematic of the inclined liquid level indicators used in this method is shown in figure 307-1; two inclined liquid level indicators having 0.05 centimeters divisions or smaller shall be used. The liquid level indicators shall be made of glass, Teflon, or any similar material that will not react with the solvent

being used. A 6-inch by 1-inch slope is recommended; however the slope may vary depending on the size and design of the solvent cleaning machine.

NOTE: It is important that the inclined liquid level indicators be constructed with ease of reading in mind. The inclined liquid level indicators should also be mounted so that they can be raised or lowered if necessary to suit the solvent cleaning machine size.

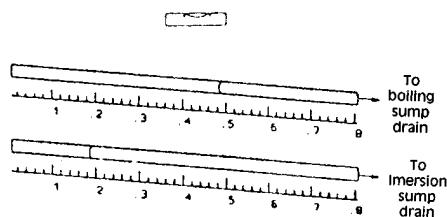


Figure 307-1. Inclined Liquid Level Indicator Apparatus.

2.2 Horizontal Indicator. Device to check the inclined liquid level indicators orientation relative to horizontal.

2.3 Velocity Meter. Hotwire and vane anemometers, or other devices capable of measuring the flow rates ranging from 0 to 15.2 meters per minute across the solvent cleaning machine.

3. Procedure

3.1 Connection of the Inclined Liquid Level Indicator. Connect one of the inclined liquid level indicators to the boiling sump drain and the other inclined liquid level indicator to the immersion sump drain using Teflon tubing and the appropriate fittings. A schematic diagram is shown in figure 307-2.

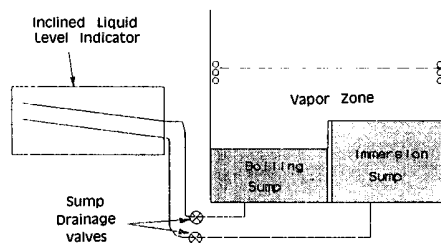


Figure 307-2. Solvent Cleaner Test Setup.

3.2 Positioning of Velocity Meter. Position the velocity meter so that it measures the flow rate of the air passing directly across the solvent cleaning machine.

3.3 Level the Inclined Liquid Level Indicators.

3.4 Initial Inclined Liquid Level Indicator Readings. Open the sump drainage valves. Allow the solvent cleaning machine to operate long enough for the vapor zone to form and the system to stabilize (check with manufacturer). Record the inclined liquid level indicators readings and the starting time on the data sheet. A sample data sheet is provided in figure 307-3.

Date _____
 Run _____
 Solvent type _____
 Solvent density, g/m^3 (lb/ft^3) _____
 Length of boiling sump (S_b), m (ft) _____
 Width of boiling sump (W_b), m (ft) _____
 Length of immersion sump (S_i), m (ft) _____
 Width of immersion sump (W_i), m (ft) _____
 Length of solvent vapor/air interface (S_v), m (ft) _____
 Width of solvent vapor/air interface (W_v), m (ft) _____

Clock time	Boiling sump reading	Immersion sump reading	Flow rate reading

Figure 307-3. Data sheet.

3.5 Final Inclined Liquid Level Indicator Readings. At the end of the 16-hour test run,

check to make sure the inclined liquid level indicators are level; if not, make the necessary adjustments. Record the final inclined liquid level indicators readings and time.

3.6 Determination of Solvent Vapor/Air Interface Area for Each Sump. Determine the area of the solvent/air interface of the individual sumps. Whenever possible, physically measure these dimensions, rather than using factory specifications. A schematic of the dimensions of a solvent cleaning machine is provided in figure 307-4.

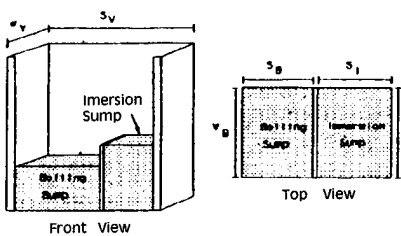


Figure 307-4. Solvent Cleaner Dimensions.

4. Calculations

4.1 Nomenclature.

A_B = area of boiling sump interface, m^2 (ft^2).

A_I = area of immersion sump interface, m^2 (ft^2).

A_v = area of solvent/air interface, m^2 (ft^2).

E = emission rate, $kg/m^2\text{-hr}$ ($lb/ft^2\text{-hr}$).

K = 100,000 $cm^3 \cdot g/m^3 \cdot kg$ for metric units.

= 12 $in./ft$ for English units.

L_{BF} = final boiling sump inclined liquid level indicators reading, cm ($in.$).

L_{Bi} = initial boiling sump inclined liquid level indicators reading, cm ($in.$).

L_{If} = final immersion sump inclined liquid level indicators reading, cm ($in.$).

L_{Ii} = initial immersion sump inclined liquid level indicators reading, cm ($in.$).

S_B = length of the boiling sump, m (ft).

S_I = length of the immersion sump, m (ft).

S_v = length of the solvent vapor/air interface, m (ft).

W_B = width of the boiling sump, m (ft).

W_I = width of the immersion sump, m (ft).

W_v = width of the solvent vapor/air interface, m (ft).

ρ = density of solvent, g/m^3 (lb/ft^3).

θ = test time, hr .

4.2 Area of Sump Interfaces. Calculate the areas of the boiling and immersion sump interfaces as follows:

$$A_B = S_B W_B \quad \text{Eq. 307-1}$$

$$A_I = S_I W_I \quad \text{Eq. 307-2}$$

4.3 Area of Solvent/Air Interface. Calculate the area of the solvent vapor/air interface as follows:

$$A_v = S_v W_v \quad \text{Eq. 307-3}$$

4.4 Emission Rate. Calculate the emission rate as follows:

$$E = \frac{(L_{Bf} - L_{Bi})\rho A_B + (L_{If} - L_{Ii})\rho A_I}{K A_v \theta}$$

Eq. 307-4

METHOD 308—PROCEDURE FOR DETERMINATION OF METHANOL EMISSION FROM STATIONARY SOURCES

1.0 Scope and Application

1.1 Analyte. Methanol. Chemical Abstract Service (CAS) No. 67-56-1.

1.2 Applicability. This method applies to the measurement of methanol emissions from specified stationary sources.

2.0 Summary of Method

A gas sample is extracted from the sampling point in the stack. The methanol is collected in deionized distilled water and adsorbed on silica gel. The sample is returned to the laboratory where the methanol in the water fraction is separated from other organic compounds with a gas chromatograph

(GC) and is then measured by a flame ionization detector (FID). The fraction adsorbed on silica gel is extracted with an aqueous solution of n-propanol and is then separated and measured by GC/FID.

3.0 Definitions [Reserved]

4.0 Interferences [Reserved]

5.0 Safety

5.1 Disclaimer. This method may involve hazardous materials, operations, and equipment. This test method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before performing this test method.

5.2 Methanol Characteristics. Methanol is flammable and a dangerous fire and explosion risk. It is moderately toxic by ingestion and inhalation.

6.0 Equipment and Supplies

6.1 Sample Collection. The following items are required for sample collection:

6.1.1 Sampling Train. The sampling train is shown in Figure 308-1 and component parts are discussed below.

6.1.1.1 Probe. Teflon®, approximately 6-millimeter (mm) (0.24 inch) outside diameter.

6.1.1.2 Impinger. A 30-milliliter (ml) mid-gate impinger. The impinger must be connected with leak-free glass connectors. Silicone grease may not be used to lubricate the connectors.

6.1.1.3 Adsorbent Tube. Glass tubes packed with the required amount of the specified adsorbent.

6.1.1.4 Valve. Needle valve, to regulate sample gas flow rate.

6.1.1.5 Pump. Leak-free diaphragm pump, or equivalent, to pull gas through the sampling train. Install a small surge tank between the pump and rate meter to eliminate the pulsation effect of the diaphragm pump on the rotameter.

6.1.1.6 Rate Meter. Rotameter, or equivalent, capable of measuring flow rate to within 2 percent of the selected flow rate of up to 1000 milliliter per minute (ml/min). Alternatively, the tester may use a critical orifice to set the flow rate.

6.1.1.7 Volume Meter. Dry gas meter (DGM), sufficiently accurate to measure the sample volume to within 2 percent, calibrated at the selected flow rate and conditions actually encountered during sampling, and equipped with a temperature sensor (dial thermometer, or equivalent) capable of measuring temperature accurately to within 3 °C (5.4 °F).

6.1.1.8 Barometer. Mercury (Hg), aneroid, or other barometer capable of measuring at-

mospheric pressure to within 2.5 mm (0.1 inch) Hg. See the NOTE in Method 5 (40 CFR part 60, appendix A), section 6.1.2.

6.1.1.9 Vacuum Gauge and Rotameter. At least 760-mm (30-inch) Hg gauge and 0- to 40-ml/min rotameter, to be used for leak-check of the sampling train.

6.2 Sample Recovery. The following items are required for sample recovery:

6.2.1 Wash Bottles. Polyethylene or glass, 500-ml, two.

6.2.2 Sample Vials. Glass, 40-ml, with Teflon®-lined septa, to store impinger samples (one per sample).

6.2.3 Graduated Cylinder. 100-ml size.

6.3 Analysis. The following are required for analysis:

6.3.1 Gas Chromatograph. GC with an FID, programmable temperature control, and heated liquid injection port.

6.3.2 Pump. Capable of pumping 100 ml/min. For flushing sample loop.

6.3.3 Flow Meter. To monitor accurately sample loop flow rate of 100 ml/min.

6.3.4 Regulators. Two-stage regulators used on gas cylinders for GC and for cylinder standards.

6.3.5 Recorder. To record, integrate, and store chromatograms.

6.3.6 Syringes. 1.0- and 10-microliter (l) size, calibrated, for injecting samples.

6.3.7 Tubing Fittings. Stainless steel, to plumb GC and gas cylinders.

6.3.8 Vials. Two 5.0-ml glass vials with screw caps fitted with Teflon®-lined septa for each sample.

6.3.9 Pipettes. Volumetric type, assorted sizes for preparing calibration standards.

6.3.10 Volumetric Flasks. Assorted sizes for preparing calibration standards.

6.3.11 Vials. Glass 40-ml with Teflon®-lined septa, to store calibration standards (one per standard).

7.0 Reagents and Standards

NOTE: Unless otherwise indicated, all reagents must conform to the specifications established by the Committee on Analytical Reagents of the American Chemical Society. Where such specifications are not available, use the best available grade.

7.1 Sampling. The following are required for sampling:

7.1.1 Water. Deionized distilled to conform to the American Society for Testing and Materials (ASTM) Specification D 1193-77, Type 3. At the option of the analyst, the potassium permanganate (KMnO₄) test for oxidizable organic matter may be omitted when high concentrations of organic matter are not expected to be present.

7.1.2 Silica Gel. Deactivated chromatographic grade 20/40 mesh silica gel packed in glass adsorbent tubes. The silica

gel is packed in two sections. The front section contains 520 milligrams (mg) of silica gel, and the back section contains 260 mg.

7.2 Analysis. The following are required for analysis:

7.2.1 Water. Same as specified in section 7.1.1.

7.2.2 n-Propanol, 3 Percent. Mix 3 ml of n-propanol with 97 ml of water.

7.2.3 Methanol Stock Standard. Prepare a methanol stock standard by weighing 1 gram of methanol into a 100-ml volumetric flask. Dilute to 100 ml with water.

7.2.3.1 Methanol Working Standard. Prepare a methanol working standard by pipetting 1 ml of the methanol stock standard into a 100-ml volumetric flask. Dilute the solution to 100 ml with water.

7.2.3.2 Methanol Standards For Impinger Samples. Prepare a series of methanol standards by pipetting 1, 2, 5, 10, and 25 ml of methanol working standard solution respectively into five 50-ml volumetric flasks. Dilute the solutions to 50 ml with water. These standards will have 2, 4, 10, 20, and 50 µg/ml of methanol, respectively. After preparation, transfer the solutions to 40-ml glass vials capped with Teflon® septa and store the vials under refrigeration. Discard any excess solution.

7.2.3.3 Methanol Standards for Adsorbent Tube Samples. Prepare a series of methanol standards by first pipetting 10 ml of the methanol working standard into a 100-ml volumetric flask and diluting the contents to exactly 100 ml with 3 percent n-propanol so-

lution. This standard will contain 10 µg/ml of methanol. Pipette 5, 15, and 25 ml of this standard, respectively, into four 50-ml volumetric flasks. Dilute each solution to 50 ml with 3 percent n-propanol solution. These standards will have 1, 3, and 5 µg/ml of methanol, respectively. Transfer all four standards into 40-ml glass vials capped with Teflon®-lined septa and store under refrigeration. Discard any excess solution.

7.2.4 GC Column. Capillary column, 30 meters (100 feet) long with an inside diameter (ID) of 0.53 mm (0.02 inch), coated with DB 624 to a film thickness of 3.0 micrometers, (µm) or an equivalent column. Alternatively, a 30-meter capillary column coated with polyethylene glycol to a film thickness of 1 µm such as AT-WAX or its equivalent.

7.2.5 Helium. Ultra high purity.

7.2.6 Hydrogen. Zero grade.

7.2.7 Oxygen. Zero grade.

8.0 Procedure

8.1 Sampling. The following items are required for sampling:

8.1.1 Preparation of Collection Train. Measure 20 ml of water into the midjet impinger. The adsorbent tube must contain 520 mg of silica gel in the front section and 260 mg of silica gel in the backup section. Assemble the train as shown in Figure 308-1. An optional, second impinger that is left empty may be placed in front of the water-containing impinger to act as a condensate trap. Place crushed ice and water around the impinger.

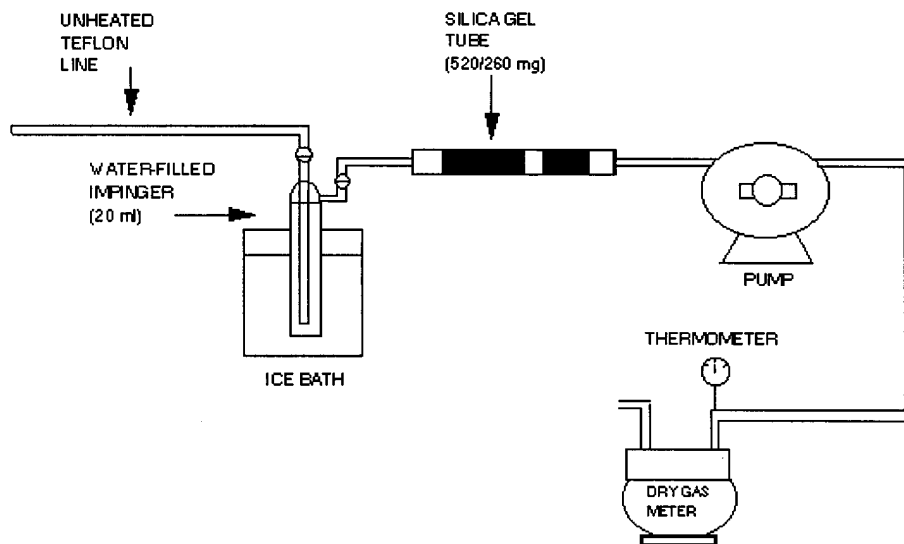


Figure 308.1. Sampling train schematic

8.1.2 Leak Check. A leak check prior to the sampling run is optional; however, a leak check after the sampling run is mandatory. The leak-check procedure is as follows:

Temporarily attach a suitable (e.g., 0-to 40-ml/min) rotameter to the outlet of the DGM, and place a vacuum gauge at or near the probe inlet. Plug the probe inlet, pull a vacuum of at least 250 mm (10 inch) Hg, and note the flow rate as indicated by the rotameter. A leakage rate not in excess of 2 percent of the average sampling rate is acceptable.

NOTE: Carefully release the probe inlet plug before turning off the pump.

8.1.3 Sample Collection. Record the initial DGM reading and barometric pressure. To begin sampling, position the tip of the Teflon® tubing at the sampling point, connect the tubing to the impinger, and start the pump. Adjust the sample flow to a constant rate between 200 and 1000 ml/min as indicated by the rotameter. Maintain this constant rate (± 10 percent) during the entire sampling run. Take readings (DGM, temperatures at DGM and at impinger outlet, and rate meter) at least every 5 minutes. Add more ice during the run to keep the temperature of the gases leaving the last impinger at 20 °C (68 °F) or less. At the conclusion of each run,

turn off the pump, remove the Teflon® tubing from the stack, and record the final readings. Conduct a leak check as in section 8.1.2. (This leak check is mandatory.) If a leak is found, void the test run or use procedures acceptable to the Administrator to adjust the sample volume for the leakage.

8.2 Sample Recovery. The following items are required for sample recovery:

8.2.1 Impinger. Disconnect the impinger. Pour the contents of the midjet impinger into a graduated cylinder. Rinse the midjet impinger and the connecting tubes with water, and add the rinses to the graduated cylinder. Record the sample volume. Transfer the sample to a glass vial and cap with a Teflon® septum. Discard any excess sample. Place the samples in an ice chest for shipment to the laboratory.

8.2.2 Adsorbent Tubes. Seal the silica gel adsorbent tubes and place them in an ice chest for shipment to the laboratory.

9.0 Quality Control

9.1 Miscellaneous Quality Control Measures. The following quality control measures are required:

Section	Quality control measure	Effect
8.1.2, 8.1.3, 10.1.	Sampling equipment leak check and calibration.	Ensures accurate measurement of sample volume.
10.2	GC calibration	Ensures precision of GC analysis.

9.2 Applicability. When the method is used to analyze samples to demonstrate compliance with a source emission regulation, an audit sample must be analyzed, subject to availability.

9.3 Audit Procedure. Analyze an audit sample with each set of compliance samples. Concurrently analyze the audit sample and a set of compliance samples in the same manner to evaluate the technique of the analyst and the standards preparation. The same analyst, analytical reagents, and analytical system shall be used both for the compliance samples and the EPA audit sample.

9.4 Audit Sample Availability. Audit samples will be supplied only to enforcement agencies for compliance tests. Audit samples may be obtained by writing: Source Test Audit Coordinator (MD-77B), Air Measurement Research Division, National Exposure Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; or by calling the Source Test Audit Coordinator (STAC) at (919) 541-7834. The audit sample request must be made at least 30 days prior to the scheduled compliance sample analysis.

9.5 Audit Results. Calculate the audit sample concentration according to the calculation procedure provided in the audit instructions included with the audit sample.

Fill in the audit sample concentration and the analyst's name on the audit response form included with the audit instructions. Send one copy to the EPA Regional Office or the appropriate enforcement agency and a second copy to the STAC. The EPA Regional office or the appropriate enforcement agency will report the results of the audit to the laboratory being audited. Include this response with the results of the compliance samples in relevant reports to the EPA Regional Office or the appropriate enforcement agency.

10.0 Calibration and Standardization

10.1 Metering System. The following items are required for the metering system:

10.1.1 Initial Calibration.

10.1.1.1 Before its initial use in the field, first leak-check the metering system (drying tube, needle valve, pump, rotameter, and DGM) as follows: Place a vacuum gauge at the inlet to the drying tube, and pull a vacuum of 250 mm (10 inch) Hg; plug or pinch off the outlet of the flow meter, and then turn off the pump. The vacuum shall remain stable for at least 30 seconds. Carefully release the vacuum gauge before releasing the flow meter end.

10.1.1.2 Next, remove the drying tube, and calibrate the metering system (at the sampling flow rate specified by the method) as follows: Connect an appropriately sized wet test meter (e.g., 1 liter per revolution (0.035 cubic feet per revolution)) to the inlet of the drying tube. Make three independent calibrations runs, using at least five revolutions of the DGM per run. Calculate the calibration factor, Y (wet test meter calibration volume divided by the DGM volume, both volumes adjusted to the same reference temperature and pressure), for each run, and average the results. If any Y-value deviates by more than 2 percent from the average, the metering system is unacceptable for use. Otherwise, use the average as the calibration factor for subsequent test runs.

10.1.2 Posttest Calibration Check. After each field test series, conduct a calibration check as in section 10.1.1 above, except for the following variations: (a) The leak check is not to be conducted, (b) three, or more revolutions of the DGM may be used, and (c) only two independent runs need be made. If the calibration factor does not deviate by more than 5 percent from the initial calibration factor (determined in section 10.1.1), then the DGM volumes obtained during the test series are acceptable. If the calibration factor deviates by more than 5 percent, recalibrate the metering system as in section 10.1.1, and for the calculations, use the calibration factor (initial or recalibration) that yields the lower gas volume for each test run.

10.1.3 Temperature Sensors. Calibrate against mercury-in-glass thermometers.

10.1.4 Rotameter. The rotameter need not be calibrated, but should be cleaned and maintained according to the manufacturer's instruction.

10.1.5 Barometer. Calibrate against a mercury barometer.

10.2 Gas Chromatograph. The following procedures are required for the gas chromatograph:

10.2.1 Initial Calibration. Inject 1 μ l of each of the standards prepared in sections 7.2.3.3 and 7.2.3.4 into the GC and record the response. Repeat the injections for each standard until two successive injections agree within 5 percent. Using the mean response for each calibration standard, prepare a linear least squares equation relating the response to the mass of methanol in the sample. Perform the calibration before analyzing each set of samples.

10.2.2 Continuing Calibration. At the beginning of each day, analyze the mid level calibration standard as described in section 10.5.1. The response from the daily analysis must agree with the response from the initial calibration within 10 percent. If it does not, the initial calibration must be repeated.

11.0 Analytical Procedure

11.1 Gas Chromatograph Operating Conditions. The following operating conditions are required for the GC:

11.1.1 Injector. Configured for capillary column, splitless, 200 °C (392 °F).

11.1.2 Carrier. Helium at 10 ml/min.

11.1.3 Oven. Initially at 45 °C for 3 minutes; then raise by 10 °C to 70 °C; then raise by 70 °C/min to 200 °C.

11.2 Impinger Sample. Inject 1 μ l of the stored sample into the GC. Repeat the injection and average the results. If the sample response is above that of the highest calibration standard, either dilute the sample until it is in the measurement range of the calibration line or prepare additional calibration standards. If the sample response is below that of the lowest calibration standard, prepare additional calibration standards. If additional calibration standards are prepared, there shall be at least two that bracket the response of the sample. These standards should produce approximately 50 percent and 150 percent of the response of the sample.

11.3 Silica Gel Adsorbent Sample. The following items are required for the silica gel adsorbent samples:

11.3.1 Preparation of Samples. Extract the front and backup sections of the adsorbent tube separately. With a file, score the glass adsorbent tube in front of the first section of silica gel. Break the tube open. Remove and discard the glass wool. Transfer the first section of the silica gel to a 5-ml glass vial and stopper the vial. Remove the spacer between

the first and second section of the adsorbent tube and discard it. Transfer the second section of silica gel to a separate 5-ml glass vial and stopper the vial.

11.3.2 Desorption of Samples. Add 3 ml of the 10 percent n-propanol solution to each of the stoppered vials and shake or vibrate the vials for 30 minutes.

11.3.3 Inject a 1- μ l aliquot of the diluted sample from each vial into the GC. Repeat the injection and average the results. If the sample response is above that of the highest calibration standard, either dilute the sample until it is in the measurement range of the calibration line or prepare additional calibration standards. If the sample response is below that of the lowest calibration standard, prepare additional calibration standards. If additional calibration standards are prepared, there shall be at least two that bracket the response of the sample. These standards should produce approximately 50 percent and 150 percent of the response of the sample.

12.0 Data Analysis and Calculations

12.1 Nomenclature.

C_{af} =Concentration of methanol in the front of the adsorbent tube, μ g/ml.

C_{ab} =Concentration of methanol in the back of the adsorbent tube, μ g/ml.

C_i =Concentration of methanol in the impinger portion of the sample train, μ g/ml.

E =Mass emission rate of methanol, μ g/hr (lb/hr).

M_{tot} =Total mass of methanol collected in the sample train, μ g.

P_{bar} =Barometric pressure at the exit orifice of the DGM, mm Hg (in. Hg).

P_{std} =Standard absolute pressure, 760 mm Hg (29.92 in. Hg).

Q_{std} =Dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr).

T_m =Average DGM absolute temperature, degrees K (°R).

T_{std} =Standard absolute temperature, 293 degrees K (528 °R).

V_{af} =Volume of front half adsorbent sample, ml.

V_{ab} =Volume of back half adsorbent sample, ml.

V_i =Volume of impinger sample, ml.

V_m =Dry gas volume as measured by the DGM, dry cubic meters (dcm), dry cubic feet (dcf).

$V_{m(std)}$ =Dry gas volume measured by the DGM, corrected to standard conditions, dry standard cubic meters (dscm), dry standard cubic feet (dscf).

12.2 Mass of Methanol. Calculate the total mass of methanol collected in the sampling train using Equation 308-1.

$$M_{\text{tot}} = V_i C_i + V_{\text{af}} C_{\text{af}} + V_{\text{ab}} C_{\text{ab}} \quad \text{Equation 308-1}$$

12.3 Dry Sample Gas Volume, Corrected to Standard Conditions. Calculate the vol-

ume of gas sampled at standard conditions using Equation 308-2.

$$V_{\text{m}}(\text{std}) = \frac{V_{\text{m}} Y T_{\text{std}} P_{\text{bar}}}{T_{\text{m}} P_{\text{std}}} \quad \text{Equation 308-2}$$

12.4 Mass Emission Rate of Methanol. Calculate the mass emission rate of methanol using Equation 308-3.

$$E = \frac{M_{\text{tot}} Q_{\text{sd}}}{V_{\text{m}}(\text{std})} \quad \text{Equation 308-3}$$

13.0 Method Performance [Reserved]

14.0 Pollution Prevention [Reserved]

15.0 Waste Management [Reserved]

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17.0 Tables, Diagrams, Flowcharts, and Validation Data

[Reserved]

METHOD 310A—DETERMINATION OF RESIDUAL HEXANE THROUGH GAS CHROMATOGRAPHY

1.0 Scope and Application

- 1.1 This method is used to analyze any crumb rubber or water samples for residual hexane content.
- 1.2 The sample is heated in a sealed bottle with an internal standard and the vapor is analyzed by gas chromatography.

2.0 Summary of Method

2.1 This method, utilizing a capillary column gas chromatograph with a flame ionization detector, determines the concentration of residual hexane in rubber crumb samples.

3.0 Definitions

3.1 The definitions are included in the text as needed.

4.0 Interferences

4.1 There are no known interferences.

5.0 Safety

5.1 It is the responsibility of the user of this procedure to establish safety and health practices applicable to their specific operation.

6.0 Equipment and Supplies

6.1 Gas Chromatograph with a flame ionization detector and data handling station

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equipped with a capillary column 30 meters long.

6.2 Chromatograph conditions for Sigma 1:

- 6.2.1 Helium pressure: 50# inlet A, 14# aux
- 6.2.2 Carrier flow: 25 cc/min
- 6.2.3 Range switch: 100x
- 6.2.4 DB: 1 capillary column

6.3 Chromatograph conditions for Hewlett-Packard GC:

- 6.3.1 Initial temperature: 40 °C
- 6.3.2 Initial time: 8 min
- 6.3.3 Rate: 0
- 6.3.4 Range: 2
- 6.3.5 DB: 1705 capillary column
- 6.4 Septum bottles and stoppers
- 6.5 Gas Syringe—0.5 cc

7.0 Reagents and Standards

7.1 Chloroform, 99.9+%, A.S.C. HPLC grade

8.0 Sample Collection, Preservation, and Storage

8.1 A representative sample should be caught in a clean 8 oz. container with a secure lid.

8.2 The container should be labeled with sample identification, date and time.

9.0 Quality Control

9.1 The instrument is calibrated by injecting calibration solution (Section 10.2 of this method) five times.

9.2 The retention time for components of interest and relative response of monomer to the internal standard is determined.

9.3 Recovery efficiency must be determined once for each sample type and whenever modifications are made to the method.

9.3.1 Determine the percent hexane in three separate dried rubber crumb samples.

9.3.2 Weigh a portion of each crumb sample into separate sample bottles and add a known amount of hexane (10 microliters) by microliter syringe and 20 microliters of internal standard. Analyze each by the described procedure and calculate the percent recovery of the known added hexane.

9.3.3 Repeat the previous step using twice the hexane level (20 microliters), analyze and calculate the percent recovery of the known added hexane.

9.3.4 Set up two additional sets of samples using 10 microliters and 20 microliters of hexane as before, but add an amount of water equal to the dry crumb used. Analyze and calculate percent recovery to show the effect of free water on the results obtained.

9.3.5 A value of R between 0.70 and 1.30 is acceptable.

9.3.6 R shall be used to correct all reported results for each compound by dividing the measured results of each compound by the R for that compound for the same sample type.

10.0 Calibration and Instrument Settings

10.1 Calibrate the chromatograph using a standard made by injecting 10 µl of fresh hexane and 20 µl of chloroform into a sealed septum bottle. This standard will be 0.6 wt.% total hexane based on 1 gram of dry rubber.

10.2 Analyze the hexane used and calculate the percentage of each hexane isomer (2-methylpentane, 3-methylpentane, n-hexane, and methylcyclopentane). Enter these percentages into the method calibration table.

10.3 Heat the standard bottle for 30 minutes in a 105 °C oven.

10.4 Inject about 0.25 cc of vapor into the gas chromatograph and after the analysis is finished, calibrate according to the procedures described by the instrument manufacturer.

11.0 Procedure

11.1 Using a cold mill set at a wide roller gap (125-150 mm), mill about 250 grams of crumb two times to homogenize the sample.

11.2 Weigh about 2 grams of wet crumb into a septum bottle and cap with a septum ring. Add 20 µl of chloroform with a syringe and place in a 105 °C oven for 45 minutes.

11.3 Run the moisture content on a separate portion of the sample and calculate the grams of dry rubber put into the septum bottle.

11.4 Set up the data station on the required method and enter the dry rubber weight in the sample weight field.

11.5 Inject a 0.25 cc vapor sample into the chromatograph and push the start button.

11.6 At the end of the analysis, the data station will print a report listing the concentration of each identified component.

11.7 To analyze water samples, pipet 5 ml of sample into the septum bottle, cap and add 20 µl of chloroform. Place in a 105 °C oven for 30 minutes.

11.8 Enter 5 grams into the sample weight field.

11.9 Inject a 0.25 cc vapor sample into the chromatograph and push the start button.

11.10 At the end of the analysis, the data station will print a report listing the concentration of each identified component.

12.0 Data Analysis and Calculation

12.1 For samples that are prepared as in section 11 of this method, ppm n-hexane is read directly from the computer.

12.2 The formulas for calculation of the results are as follows:

$$\text{ppm}_{\text{hexane}} = (A_{\text{hexane}} \times R_{\text{hexane}}) / (A_{\text{is}} \times R_{\text{is}})$$

Where:

A_{hexane} = area of hexane

R_{hexane} = response of hexane

A_{is} = area of the internal standard

R_{is} = response of the internal standard

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% hexane in crumb=(ppm_{hexane}/sample amount)100

12.3 Correct the results by the value of R (as determined in sections 9.3.4, 9.3.5, and 9.3.6 of this method).

13.0 Method Performance

13.1 The test has a standard deviation of 0.14 wt% at 0.66 wt% hexane. Spike recovery of 12 samples at two levels of hexane averaged 102.3%. Note: Recovery must be determined for each type of sample. The values given here are meant to be examples of method performance.

14.0 Pollution Prevention

14.1 Waste generation should be minimized where possible. Sample size should be

an amount necessary to adequately run the analysis.

15.0 Waste Management

15.1 All waste shall be handled in accordance with federal and state environmental regulations.

16.0 References and Publications

16.1 DSM Copolymer Test Method T-3380.

METHOD 310B—DETERMINATION OF RESIDUAL HEXANE THROUGH GAS CHROMATOGRAPHY

1.0 Scope and Application

Analyte	CAS No.	Matrix	Method sensitivity (5.5g sample size)
Hexane	110-54-3	Rubber crumb .....	.01 wt%.
Ethylidene norbornene (ENB)	16219-75-3	Rubber crumb .....	.001 wt%.

1.1 Data Quality Objectives:

In the production of ethylene-propylene terpolymer crumb rubber, the polymer is recovered from solution by flashing off the solvent with steam and hot water. The resulting water-crumb slurry is then pumped to the finishing units. Certain amounts of solvent (hexane being the most commonly used solvent) and diene monomer remain in the crumb. The analyst uses the following procedure to determine those amounts.

2.0 Summary of Method

2.1 The crumb rubber sample is dissolved in toluene to which heptane has been added as an internal standard. Acetone is then added to this solution to precipitate the crumb, and the supernatant is analyzed for hexane and diene by a gas chromatograph equipped with a flame ionization detector (FID).

3.0 Definitions

3.1 Included in text as needed.

4.0 Interferences

4.1 None known.

4.2 Benzene, introduced as a contaminant in the toluene solvent, elutes between methyl cyclopentane and cyclohexane. However, the benzene peak is completely resolved.

4.3 2,2-dimethyl pentane, a minor component of the hexane used in our process, elutes just prior to methyl cyclopentane. It is included as "hexane" in the analysis whether it is integrated separately or included in the methyl cyclopentane peak.

5.0 Safety

5.1 This procedure does not purport to address all of the safety concerns associated with its use. It is the responsibility of the user of this procedure to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

5.2 Chemicals used in this analysis are flammable and hazardous (see specific toxicity information below). Avoid contact with sources of ignition during sample prep. All handling should be done beneath a hood. Playtex or nitrile gloves recommended.

5.3 Hexane is toxic by ingestion and inhalation. Vapor inhalation causes irritation of nasal and respiratory passages, headache, dizziness, nausea, central nervous system depression. Chronic overexposure can cause severe nerve damage. May cause irritation on contact with skin or eyes. May cause damage to kidneys.

5.3 ENB may be harmful by inhalation, ingestion, or skin absorption. Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract. Causes skin irritation.

5.4 Toluene is harmful or fatal if swallowed. Vapor harmful if inhaled. Symptoms: headache, dizziness, hallucinations, distorted perceptions, changes in motor activity, nausea, diarrhea, respiratory irritation, central nervous system depression, unconsciousness, liver, kidney and lung damage. Contact can cause severe eye irritation. May cause skin irritation. Causes irritation of eyes, nose, and throat.

5.5 Acetone, at high concentrations or prolonged overexposure, may cause headache, dizziness, irritation of eyes and respiratory tract, loss of strength, and narcosis. Eye contact causes severe irritation; skin contact may cause mild irritation. Concentrations of 20,000 ppm are immediately dangerous to life and health.

5.6 Heptane is harmful if inhaled or swallowed. May be harmful if absorbed through the skin. Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract. Prolonged or repeated exposure to skin causes defatting and dermatitis.

5.7 The steam oven used to dry the polymer in this procedure is set at 110° C. Wear leather gloves when removing bottles from the oven.

6.0 Equipment and Supplies

- 6.1 4000-ml volumetric flask
- 6.2 100-ml volumetric pipette
- 6.3 1000-ml volumetric flask
- 6.4 8-oz. French Square sample bottles with plastic-lined caps
- 6.5 Top-loading balance
- 6.6 Laboratory shaker
- 6.7 Laboratory oven set at 110° C (steam oven)
- 6.8 Gas chromatograph, Hewlett-Packard 5890A, or equivalent, interfaced with HP 7673A (or equivalent) autosampler (equipped with nanoliter adapter and robotic arm), and HP 3396 series II or 3392A (or equivalent) integrator/controller.
- 6.9 GC column, capillary type, 50m × 0.53mm, methyl silicone, 5 micron film thickness, Quadrex, or equivalent.
- 6.10 Computerized data acquisition system, such as CIS/CALS

6.11 Crimp-top sample vials and HP p/n 5181-1211 crimp caps.

6.12 Glass syringes, 5-ml, with “Luer-lock” fitting

6.13 Filters, PTFE, .45µm pore size, Gelman Acrodisc or equivalent, to fit on Luer-lock syringes (in 6.12, above).

7.0 Reagents and Standards

7.1 Reagent toluene, EM Science Omnisolv

Purity Check: Prior to using any bottle of reagent toluene, analyze it according to section 11.2 of this method. Use the bottle only if hexane, heptane, and ENB peak areas are less than 15 each (note that an area of 15 is equivalent to less than 0.01 wt% in a 10g sample).

7.2 Reagent acetone, EM Science Omnisolv HR-GC

Purity Check: Prior to using any bottle of reagent acetone, analyze it according to section 11.2 of this method. Use the bottle only if hexane, heptane, and ENB peak areas are less than 15 each.

7.3 Reagent heptane, Aldrich Chemical Gold Label, Cat #15,487-3

Purity Check: Prior to using any bottle of reagent heptane, analyze it according to section 11.2 of this method. Use the bottle only if hexane and ENB peak areas are less than 5 each.

7.4 Internal standard solution—used as a concentrate for preparation of the more dilute Polymer Dissolving Solution. It contains 12.00g heptane/100ml of solution which is 120.0g per liter.

Preparation of internal standard solution (polymer dissolving stock solution):

Action	Notes
7.4.1 Tare a clean, dry 1-liter volumetric flask on the balance. Record the weight to three places.	If the 1-liter volumetric flask is too tall to fit in the balance case, you can shield the flask from drafts by inverting a paint bucket with a hole cut in the bottom over the balance cover. Allow the neck of the flask to project through the hole in the bucket.
7.4.2 Weigh 120.00 g of n-heptane into the flask. Record the total weight of the flask and heptane as well as the weight of heptane added.	Use 99+% n-heptane from Aldrich or Janssen Chimica.
7.4.3 Fill the flask close to the mark with toluene, about 1 to 2" below the mark.	Use EM Science Omnisolve toluene, Grade TX0737–1, or equivalent.
7.4.4 Shake the flask vigorously to mix the contents	Allow any bubbles to clear before proceeding to the next step.
7.4.5 Top off the flask to the mark with toluene. Shake vigorously, as in section 5.4.4 of this method, to mix well.	
7.4.6 Weigh the flask containing the solution on the three place balance record the weight	
7.4.7 Transfer the contents of the flask to a 1 qt Boston round bottle.	Discard any excess solution
7.4.8 Label the bottle with the identity of the contents, the weights of heptane and toluene used, the date of preparation and the preparer's name.	Be sure to include the words “Hexane in Crumb Polymer Dissolving Stock Solution” on the label.
7.4.9 Refrigerate the completed blend for the use of the routine Technicians.	

7.5 Polymer Dissolving Solution (‘‘PDS’’)—Heptane (as internal standard) in toluene. This solution contains 0.3g of

heptane internal standard per 100 ml of solution.

7.5.1 Fill a 4000ml volumetric flask about $\frac{3}{4}$ full with toluene.

7.5.2 Add 100 ml of the internal standard solution (section 7.4 of this method) to the flask using the 100ml pipette.

7.5.3 Fill the flask to the mark with toluene. Discard any excess.

7.5.4 Add a large magnetic stirring bar to the flask and mix by stirring.

7.5.5 Transfer the polymer solvent solution to the one-gallon labeled container with 50ml volumetric dispenser attached.

7.5.6 Purity Check: Analyze according to section 11.2. *NOTE:* You must "precipitate" the sample with an equal part of acetone (thus duplicating actual test conditions— see section 11.1 of this method, sample prep) before analyzing. Analyze the reagent 3 times to quantify the C_6 and ENB interferences. Inspect the results to ensure good agreement among the three runs (within 10%).

7.5.7 Tag the bottle with the following information:

POLYMER DISSOLVING SOLUTION
FOR C_6 IN CRUMB ANALYSIS
PREPARER'S NAME
DATE
CALS FILE ID'S OF THE THREE
ANALYSES FOR PURITY (from section
7.5.6 of this method)

7.6 Quality Control Solution: the quality control solution is prepared by adding specific amounts of mixed hexanes (barge hexane), n-nonane and ENB to some polymer dissolving solution. Nonane elutes in the same approximate time region as ENB and is used to quantify in that region because it has a longer shelf life. ENB, having a high tendency to polymerize, is used in the QC solution only to ensure that both ENB isomers elute at the proper time.

First, a concentrated stock solution is prepared; the final QC solution can then be prepared by diluting the stock solution.

7.6.1 In preparation of stock solution, fill a 1-liter volumetric flask partially with polymer dissolving solution (PDS)—see section 7.5 of this method. Add 20.0 ml barge hexane, 5.0 ml n-nonane, and 3 ml ENB. Finish filling the volumetric to the mark with PDS.

7.6.2 In preparation of quality control solution, dilute the quality control stock solution (above) precisely 1:10 with PDS, i.e. 10 ml of stock solution made up to 100 ml (volumetric flask) with PDS. Pour the solution into a 4 oz. Boston round bottle and store in the refrigerator.

8.0 Sample Collection, Preservation and Storage

8.1 Line up facility to catch crumb samples. The facility is a special facility where the sample is drawn.

8.1.1 Ensure that the cock valve beneath facility is closed.

8.1.2 Line up the system from the slurry line cock valve to the cock valve at the nozzle on the stripper.

8.1.3 Allow the system to flush through facility for a period of 30 seconds.

8.2 Catch a slurry crumb sample.

8.2.1 Simultaneously close the cock valves upstream and downstream of facility.

8.2.2 Close the cock valve beneath the slurry line in service.

8.2.3 Line up the cooling tower water through the sample bomb water jacket to the sewer for a minimum of 30 minutes.

8.2.4 Place the sample catching basket beneath facility and open the cock valve underneath the bomb to retrieve the rubber crumb.

8.2.5 If no rubber falls by gravity into the basket, line up nitrogen to the bleeder upstream of the sample bomb and force the rubber into the basket.

8.2.6 Close the cock valve underneath the sample bomb.

8.3 Fill a plastic "Whirl-pak" sample bag with slurry crumb and send it to the lab immediately.

8.4 Once the sample reaches the lab, it should be prepped as soon as possible to avoid hexane loss through evaporation. Samples which have lain untouched for more than 30 minutes should be discarded.

9.0 Quality Control

Quality control is monitored via a computer program that tracks analyses of a prepared QC sample (from section 7.6.2 of this method). The QC sample result is entered daily into the program, which plots the result as a data point on a statistical chart. If the data point does not satisfy the "in-control" criteria (as defined by the lab quality facilitator), an "out-of-control" flag appears, mandating corrective action.

In addition, the area of the n-heptane peak is monitored so that any errors in making up the polymer dissolving solution will be caught and corrected. Refer to section 12.4 of this method.

9.1 Fill an autosampler vial with the quality control solution (from section 7.6.2 of this method) and analyze on the GC as normal (per section 11 of this method).

9.2 Add the concentrations of the 5 hexane isomers as they appear on the CALS printout. Also include the 2,2-dimethyl-pentane peak just ahead of the methyl cyclopentane (the fourth major isomer) peak in the event that the peak integration split this peak out. Do not include the benzene peak in the sum. Note the nonane concentration. Record both results (total hexane and nonane) in the QC computer program. If out of control, and GC appears to be functioning within normal parameters, reanalyze a fresh control sample.

If the fresh QC is not in control, check stock solution for contaminants or make up a new QC sample with the toluene currently in use. If instrument remains out-of-control, more thorough GC troubleshooting may be needed.

Also, verify that the instrument has detected both isomers of ENB (quantification not necessary—see section 7.0 of this method).

9.3 Recovery efficiency must be determined for each sample type and whenever modifications are made to the method. Recovery shall be between 70 and 130 percent. All test results must be corrected by the recovery efficiency value (R).

9.3.1 Approximately 10 grams of wet EPDM crumb (equivalent to about 5 grams of dry rubber) shall be added to six sample bottles containing 100 ml of hexane in crumb polymer dissolving solution (toluene containing 0.3 gram n-heptane/100 ml solution). The polymer shall be dissolved by agitating the bottles on a shaker for 4 hours. The polymer shall be precipitated using 100 ml acetone.

9.3.2 The supernatant liquid shall be decanted from the polymer. Care shall be taken to remove as much of the liquid phase from the sample as possible to minimize the effect of retained liquid phase upon the next cycle of the analysis. The supernatant liquid shall be analyzed by gas chromatography using an internal standard quantitation method with heptane as the internal standard.

9.3.3 The precipitated polymer from the steps described above shall be re-dissolved using toluene as the solvent. The toluene solvent and acetone precipitant shall be determined to be free of interfering compounds.

9.3.4 The rubber which was dissolved in the toluene shall be precipitated with acetone as before, and the supernatant liquid decanted from the precipitated polymer. The liquid shall be analyzed by gas chromatography and the rubber phase dried in a steam-oven to determine the final polymer weight.

9.3.5 The ratios of the areas of the hexane peaks and of the heptane internal standard peak shall be calculated for each of the six samples in the two analysis cycles outlined above. The area ratios of the total hexane to heptane (R1) shall be determined for the two analysis cycles of the sample set. The ratio of the values of R1 from the second analysis cycle to the first cycle shall be determined to give a second ratio (R2).

10.0 Calibration and Standardization

The procedure for preparing a Quality Control sample with the internal standard in it is outlined in section 7.6 of this method.

10.1 The relative FID response factors for n-heptane, the internal standard, versus the various hexane isomers and ENB are rel-

atively constant and should seldom need to be altered. However Baseline construction is a most critical factor in the production of good data. For this reason, close attention should be paid to peak integration. Procedures for handling peak integration will depend upon the data system used.

10.2 If recalibration of the analysis is needed, make up a calibration blend of the internal standard and the analytes as detailed below and analyze it using the analytical method used for the samples.

10.2.1 Weigh 5 g heptane into a tared scintillation vial to five places.

10.2.2 Add 0.2 ml ENB to the vial and reweigh.

10.2.3 Add 0.5 ml hexane to the vial and reweigh.

10.2.4 Cap, and shake vigorously to mix.

10.2.5 Calculate the weights of ENB and of hexane added and divide their weights by the weight of the n-heptane added. The result is the known of given value for the calibration.

10.2.6 Add 0.4 ml of this mixture to a mixture of 100 ml toluene and 100 ml of acetone. Cap and shake vigorously to mix.

10.2.7 Analyze the sample.

10.2.8 Divide the ENB area and the total areas of the hexane peaks by the n-heptane area. This result is the "found" value for the calibration.

10.2.9 Divide the appropriate "known" value from 10.2.5 by the found value from 10.2.8. The result is the response factor for the analyte in question. Previous work has shown that the standard deviation of the calibration method is about 1% relative.

11.0 Procedure

11.1 SAMPLE PREPARATION

11.1.1 Tare an 8oz sample bottle—Tag attached, cap off; record weight and sample ID on tag in pencil.

11.1.2 Place crumb sample in bottle: RLA-1: 20g; RLA-3: 10g—(gives a dry wt of ~10g); (gives a dry wt of ~5.5g).

11.1.3 Dispense 100ml of PDS into each bottle. SAMPLE SHOULD BE PLACED INTO SOLUTION ASAP TO AVOID HEXANE LOSS—Using "Dispensette" pipettor. *Before dispensing, "purge" the dispensette (25% of its volume) into a waste bottle to eliminate any voids.*

11.1.4 Tightly cap bottles and load samples into shaker.

11.1.5 Insure that "ON-OFF" switch on the shaker itself is "ON."

11.1.6 Locate shaker timer. Insure that toggle switch atop timer control box is in the middle ("off") position. If display reads "04:00" (4 hours), move toggle switch to the left position. Shaker should begin operating.

11.1.7 After shaker stops, add 100 ml acetone to each sample to precipitate polymer. Shake minimum of 5 minutes on shaker—

Vistalon sample may not have fully dissolved; nevertheless, for purposes of consistency, 4 hours is the agreed-upon dissolving time.

11.1.8 Using a 5-ml glass Luer-lock syringe and Acrodisc filter, filter some of the supernatant liquid into an autosampler vial; crimp the vial and load it into the GC autosampler for analysis (section 11.2 of this method)—The samples are filtered to prevent polymer buildup in the GC. Clean the syringes in toluene.

11.1.9 Decant remaining supernatant into a hydrocarbon waste sink, being careful not to discard any of the polymer. Place bottle of precipitate into the steam oven and dry for six hours—Some grades of Vistalon produce very small particles in the precipitate, thus making complete decanting impossible without discarding some polymer. In this case, decant as much as possible and put into the oven as is, allowing the oven to drive off remaining supernatant (this practice is avoided for environmental reasons). **WARNING: OVEN IS HOT—110 °C (230° F).**

11.1.10 Cool, weigh and record final weight of bottle.

11.2 GC ANALYSIS

11.2.1 Initiate the CALS computer channel.

11.2.2 Enter the correct instrument method into the GC's integrator.

11.2.3 Load sample vial(s) into autosampler.

11.2.4 Start the integrator.

11.2.5 When analysis is complete, plot CALS run to check baseline skim.

12.0 Data Analysis and Calculations

12.1 Add the concentrations of the hexane peaks as they appear on the CALS printout. Do not include the benzene peak in the sum.

12.2 Subtract any hexane interferences found in the PDS (see section 7.5.6 of this method); record the result.

12.3 Note the ENB concentration on the CALS printout. Subtract any ENB interference found in the PDS and record this result in a "% ENB by GC" column in a logbook.

12.4 Record the area (from CALS printout) of the heptane internal standard peak in a "C7 area" column in the logbook. This helps track instrument performance over the long term.

12.5 After obtaining the final dry weight of polymer used (section 11.1.10 of this method), record that result in a "dry wt." column of the logbook.

12.6 Divide the %C6 by the dry weight to obtain the total PHR hexane in crumb. Similarly, divide the %ENB by the dry weight to obtain the total PHR ENB in crumb. Note that PHR is an abbreviation for "parts per hundred". Record both the hexane and ENB results in the logbook.

12.7 Correct all results by the recovery efficiency value (R).

13.0 Method Performance

13.1 The method has been shown to provide 100% recovery of the hexane analyte. The method was found to give a 6% relative standard deviation when the same six portions of the same sample were carried through the procedure. Note: These values are examples; each sample type must be tested for sample recovery.

14.0 Pollution Prevention

14.1 Dispose of all hydrocarbon liquids in the appropriate disposal sink system; never pour hydrocarbons down a water sink.

14.2 As discussed in section 11.1.9 of this method, the analyst can minimize venting hydrocarbon vapor to the atmosphere by decanting as much hydrocarbon liquid as possible before oven drying.

15.0 Waste Management

15.1 The Technician conducting the analysis should follow the proper waste management practices for their laboratory location.

16.0 References

16.1 Baton Rouge Chemical Plant Analytical Procedure no. BRCP 1302

16.2 Material Safety Data Sheets (from chemical vendors) for hexane, ENB, toluene, acetone, and heptane

METHOD 310C—DETERMINATION OF RESIDUAL N-HEXANE IN EPDM RUBBER THROUGH GAS CHROMATOGRAPHY

1.0 Scope and Application

1.1 This method describes a procedure for the determination of residual hexane in EPDM wet crumb rubber in the 0.01–2% range by solvent extraction of the hexane followed by gas chromatographic analysis where the hexane is detected by flame ionization and quantified via an internal standard.

1.2 This method may involve hazardous materials operations and equipment. This method does not purport to address all the safety problems associated with its use, if any. It is the responsibility of the user to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 Summary

2.1 Residual hexane contained in wet pieces of EPDM polymer is extracted with MIBK. A known amount of an internal standard (IS) is added to the extract which is subsequently analyzed via gas chromatography where the hexane and IS are separated and detected utilizing a megabore column and flame ionization detection (FID). From the

response to the hexane and the IS, the amount of hexane in the EPDM polymer is calculated.

3.0 Definitions

- 3.1 Hexane—refers to n-hexane
- 3.2 Heptane—refers to n-heptane
- 3.3 MIBK—methyl isobutyl ketone (4 methyl 2—Pentanone)

4.0 Interferences

4.1 Material eluting at or near the hexane and/or the IS will cause erroneous results. Prior to extraction, solvent blanks must be analyzed to confirm the absence of interfering peaks.

5.0 Safety

5.1 Review Material Safety Data Sheets of the chemicals used in this method.

6.0 Equipment and Supplies

- 6.1 4 oz round glass jar with a wide mouth screw cap lid.
- 6.2 Vacuum oven.
- 6.3 50 ml pipettes.
- 6.4 A gas chromatograph with an auto sampler and a 50 meter, 0.53 ID, methyl silicone column with 5 micron phase thickness.
- 6.5 Shaker, large enough to hold 10, 4 oz. jars.
- 6.6 1000 and 4000 ml volumetric flasks.
- 6.7 Electronic integrator or equivalent data system.
- 6.8 GC autosampler vials.
- 6.9 50 uL syringe.

7.0 Reagents and Standards

- 7.1 Reagent grade Methyl-Iso-Butyl-Ketone (MIBK)
- 7.2 n-heptane, 99% + purity
- 7.3 n-hexane, 99% + purity

8.0 Sample Collection

8.1 Trap a sample of the EPDM crumb slurry in the sampling apparatus. Allow the crumb slurry to circulate through the sampling apparatus for 5 minutes; then close off the valves at the bottom and top of the sampling apparatus, trapping the crumb slurry. Run cooling water through the water jacket for a minimum of 30 minutes. Expel the cooled crumb slurry into a sample catching basket. If the crumb does not fall by gravity, force it out with demineralized water or nitrogen. Send the crumb slurry to the lab for analysis.

9.0 Quality Control

9.1 The Royalene crumb sample is extracted three times with MIBK containing an internal standard. The hexane from each extraction is added together to obtain a total hexane content. The percent hexane in

the first extraction is then calculated and used as the recovery factor for the analysis.

9.2 Follow this test method through section 11.4 of the method. After removing the sample of the first extraction to be run on the gas chromatograph, drain off the remainder of the extraction solvent, retaining the crumb sample in the sample jar. Rinse the crumb with demineralized water to remove any MIBK left on the surface of the crumb. Repeat the extraction procedure with fresh MIBK with internal standard two more times.

9.3 After the third extraction, proceed to section 11.5 of this method and obtain the percent hexane in each extraction. Use the sample weight obtained in section 12.1 of this method to calculate the percent hexane in each of the extracts.

9.4 Add the percent hexane obtained from the three extractions for a total percent hexane in the sample.

9.5 Use the following equations to determine the recovery factor (R):

% Recovery of the first extraction = (% hexane in the first extract / total % hexane) × 100

Recovery Factor (R) = (% Hexane Recovered in the first extract) / 100

10.0 Calibration

10.1 Preparation of Internal Standard (IS) solution:

Accuracy weigh 30 grams of n-heptane into a 1000 ml volumetric flask. Dilute to the mark with reagent grade MIBK. Label this Solution "A". Pipette 100 mls. of Solution A into a 4 liter volumetric flask. Fill the flask to the mark with reagent MIBK. Label this Solution "B". Solution "B" will have a concentration of 0.75 mg/ml of heptane.

10.2 Preparation of Hexane Standard Solution (HS):

Using a 50 uL syringe, weigh by difference, 20 mg of n-hexane into a 50 ml volumetric flask containing approximately 40 ml of Solution B. Fill the flask to the mark with Solution B and mix well.

10.3 Conditions for GC analysis of standards and samples:

Temperature:

Initial=40 °C

Final=150 °C

Injector=160 °C

Detector=280 °C

Program Rate=5.0 °C/min

Initial Time=5 minutes Final Time=6 minutes

Flow Rate=5.0 ml/min

Sensitivity=detector response must be adjusted to keep the hexane and IS on scale.

10.4 Fill an autosampler vial with the HS, analyze it three times and calculate a Hexane Relative Response Factor (RF) as follows:

$$RF = (A_{IS} \times C_{HS} \times P_{HS}) / (A_{HS} \times C_{IS} \times P_{IS}) \quad (1)$$

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Where:

A_{IS} =Area of IS peak (Heptane)

A_{HS} =Area of peak (Hexane Standard)

C_{HS} =Mg of Hexane/50 ml HS

C_{IS} =Mg of Heptane/50 ml IS Solution B

P_{IS} =Purity of the IS n-heptane

P_{HS} =Purity of the HS n-hexane

11.0 Procedure

11.1 Weight 10 grams of wet crumb into a tared (W1), wide mouth 4 oz. jar.

11.2 Pipette 50 ml of Solution B into the jar with the wet crumb rubber.

11.3 Screw the cap on tightly and place it on a shaker for 4 hours.

11.4 Remove the sample from the shaker and fill an autosampler vial with the MIBK extract.

11.5 Analyze the sample two times.

11.6 Analyze the HS twice, followed by the samples. Inject the HS twice at the end of each 10 samples or at the end of the run.

12.0 Calculations

12.1 Drain off the remainder of the MIBK extract from the polymer in the 4 oz. jar. Retain all the polymer in the jar. Place the uncovered jar and polymer in a heated vacuum oven until the polymer is dry. Reweigh the jar and polymer (W2) and calculate the dried sample weight of the polymer as follows:

Dried SW=W2—W1 (2)

12.2 Should the polymer be oil extended, pipette 10 ml of the MIBK extract into a tared evaporating dish (W1) and evaporate to dryness on a steam plate.

Reweigh the evaporating dish containing the extracted oil (W2). Calculate the oil content of the polymer as follows:

Gram of oil extracted =5 (W2—W1) (3)

% Hexane in polymer=($A_s \times RF \times C_{IS} \times P_{IS}$)/($A_{IS} \times SW$) (4)

Where:

A_s =Area of sample hexane sample peak.

A_{IS} =Area of IS peak in sample.

C_{IS} =Concentration of IS in 50 ml.

P_{IS} =Purity of IS.

SW=Weight of dried rubber after extraction. (For oil extended polymer, the amount of oil extracted is added to the dry rubber weight).

% Corrected Hexane=(% Hexane in Polymer)/R (5)

R=Recovery factor determined in section 9 of this method.

13.0 Method Performance

13.1 Performance must be determined for each sample type by following the procedures in section 9 of this method.

14.0 Waste Generation

14.1 Waste generation should be minimized where possible.

15.0 Waste Management

15.1 All waste shall be handled in accordance with Federal and State environmental regulations.

16.0 References

[Reserved]

METHOD 311—ANALYSIS OF HAZARDOUS AIR POLLUTANT COMPOUNDS IN PAINTS AND COATINGS BY DIRECT INJECTION INTO A GAS CHROMATOGRAPH

1. Scope and Application

1.1 Applicability. This method is applicable for determination of most compounds designated by the U.S. Environmental Protection Agency as volatile hazardous air pollutants (HAP's) (See Reference 1) that are contained in paints and coatings. Styrene, ethyl acrylate, and methyl methacrylate can be measured by ASTM D 4827-93 or ASTM D 4747-87. Formaldehyde can be measured by ASTM PS 9-94 or ASTM D 1979-91. Toluene diisocyanate can be measured in urethane prepolymers by ASTM D 3432-89. Method 311 applies only to those volatile HAP's which are added to the coating when it is manufactured, not to those which may form as the coating cures (reaction products or cure volatiles). A separate or modified test procedure must be used to measure these reaction products or cure volatiles in order to determine the total volatile HAP emissions from a coating. Cure volatiles are a significant component of the total HAP content of some coatings. The term "coating" used in this method shall be understood to mean paints and coatings.

1.2 Principle. The method uses the principle of gas chromatographic separation and quantification using a detector that responds to concentration differences. Because there are many potential analytical systems or sets of operating conditions that may represent useable methods for determining the concentrations of the compounds cited in Section 1.1 in the applicable matrices, all systems that employ this principle, but differ only in details of equipment and operation, may be used as alternative methods, provided that the prescribed quality control, calibration, and method performance requirements are met. Certified product data sheets (CPDS) may also include information relevant to the analysis of the coating sample including, but not limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.

2. Summary of Method

Whole coating is added to dimethylformamide and a suitable internal standard compound is added. An aliquot of the sample mixture is injected onto a

chromatographic column containing a stationary phase that separates the analytes from each other and from other volatile compounds contained in the sample. The concentrations of the analytes are determined by comparing the detector responses for the sample to the responses obtained using known concentrations of the analytes.

3. Definitions [Reserved]

4. Interferences

4.1 Coating samples of unknown composition may contain the compound used as the internal standard. Whether or not this is the case may be determined by following the procedures of Section 11 and deleting the addition of the internal standard specified in Section 11.5.3. If necessary, a different internal standard may be used.

4.2 The GC column and operating conditions developed for one coating formulation may not ensure adequate resolution of target analytes for other coating formulations. Some formulations may contain nontarget analytes that coelute with target analytes. If there is any doubt about the identification or resolution of any gas chromatograph (GC) peak, it may be necessary to analyze the sample using a different GC column or different GC operating conditions.

4.3 Cross-contamination may occur whenever high-level and low-level samples are analyzed sequentially. The order of sample analyses specified in Section 11.7 is designed to minimize this problem.

4.4 Cross-contamination may also occur if the devices used to transfer coating during the sample preparation process or for injecting the sample into the GC are not adequately cleaned between uses. All such devices should be cleaned with acetone or other suitable solvent and checked for plugs or cracks before and after each use.

5. Safety

5.1 Many solvents used in coatings are hazardous. Precautions should be taken to avoid unnecessary inhalation and skin or eye contact. This method may involve hazardous materials, operations, and equipment. This test method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and to determine the applicability of regulatory limitations in regards to the performance of this test method.

5.2 Dimethylformamide is harmful if inhaled or absorbed through the skin. The user should obtain relevant health and safety information from the manufacturer. Dimethylformamide should be used only with adequate ventilation. Avoid contact with skin, eyes, and clothing. In case of contact, immediately flush skin or eyes with

plenty of water for at least 15 minutes. If eyes are affected, consult a physician. Remove and wash contaminated clothing before reuse.

5.3 User's manuals for the gas chromatograph and other related equipment should be consulted for specific precautions to be taken related to their use.

6. Equipment and Supplies

NOTE: Certified product data sheets (CPDS) may also include information relevant to the analysis of the coating sample including, but not limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.

6.1 Sample Collection.

6.1.1 Sampling Containers. Dual-seal sampling containers, four to eight fluid ounce capacity, should be used to collect the samples. Glass sample bottles or plastic containers with volatile organic compound (VOC) impermeable walls must be used for corrosive substances (e.g., etch primers and certain coating catalysts such as methyl ethyl ketone (MEK) peroxide). Sample containers, caps, and inner seal liners must be inert to the compounds in the sample and must be selected on a case-by-case basis.

6.1.1.1 Other routine sampling supplies needed include waterproof marking pens, tubing, scrappers/spatulas, clean rags, paper towels, cooler/ice, long handle tongs, and mixing/stirring paddles.

6.1.2 Personal safety equipment needed includes eye protection, respiratory protection, a hard hat, gloves, steel toe shoes, etc.

6.1.3 Shipping supplies needed include shipping boxes, packing material, shipping labels, strapping tape, etc.

6.1.4 Data recording forms and labels needed include coating data sheets and sample can labels.

NOTE: The actual requirements will depend upon the conditions existing at the source sampled.

6.2 Laboratory Equipment and Supplies.

6.2.1 Gas Chromatograph (GC). Any instrument equipped with a flame ionization detector and capable of being temperature programmed may be used. Optionally, other types of detectors (e.g., a mass spectrometer), and any necessary interfaces, may be used provided that the detector system yields an appropriate and reproducible response to the analytes in the injected sample. Autosampler injection may be used, if available.

6.2.2 Recorder. If available, an electronic data station or integrator may be used to record the gas chromatogram and associated data. If a strip chart recorder is used, it must

meet the following criteria: A 1 to 10 millivolt (mV) linear response with a full scale response time of 2 seconds or less and a maximum noise level of ± 0.03 percent of full scale. Other types of recorders may be used as appropriate to the specific detector installed provided that the recorder has a full scale response time of 2 seconds or less and a maximum noise level of ± 0.03 percent of full scale.

6.2.3 Column. The column must be constructed of materials that do not react with components of the sample (e.g., fused silica, stainless steel, glass). The column should be of appropriate physical dimensions (e.g., length, internal diameter) and contain sufficient suitable stationary phase to allow separation of the analytes. DB-5, DB-Wax, and FFAP columns are commonly used for paint analysis; however, it is the responsibility of each analyst to select appropriate columns and stationary phases.

6.2.4 Tube and Tube Fittings. Supplies to connect the GC and gas cylinders.

6.2.5 Pressure Regulators. Devices used to regulate the pressure between gas cylinders and the GC.

6.2.6 Flow Meter. A device used to determine the carrier gas flow rate through the GC. Either a digital flow meter or a soap film bubble meter may be used to measure gas flow rates.

6.2.7 Septa. Seals on the GC injection port through which liquid or gas samples can be injected using a syringe.

6.2.8 Liquid Charging Devices. Devices used to inject samples into the GC such as clean and graduated 1, 5, and 10 microliter (μ l) capacity syringes.

6.2.9 Vials. Containers that can be sealed with a septum in which samples may be prepared or stored. The recommended size is 25 ml capacity. Mininert® valves have been found satisfactory and are available from Pierce Chemical Company, Rockford, Illinois.

6.2.10 Balance. Device used to determine the weights of standards and samples. An analytical balance capable of accurately weighing to 0.0001 g is required.

7. Reagents and Standards

7.1 Purity of Reagents. Reagent grade chemicals shall be used in all tests. Unless otherwise specified, all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Other grades may be used provided it is first ascertained that the reagent is of sufficient purity to permit its use without lessening the accuracy of determination.

7.2 Carrier Gas. Helium carrier gas shall have a purity of 99.995 percent or higher. High purity nitrogen may also be used. Other carrier gases that are appropriate for the column system and analyte may also be used. Ultra-high purity grade hydrogen gas

and zero-grade air shall be used for the flame ionization detector.

7.3 Dimethylformamide (DMF). Solvent for all standards and samples. Some other suitable solvent may be used if DMF is not compatible with the sample or coelutes with a target analyte.

NOTE: DMF may coelute with ethylbenzene or p-xylene under the conditions described in the note under Section 6.2.3.

7.4 Internal Standard Materials. The internal standard material is used in the quantitation of the analytes for this method. It shall be gas chromatography spectrophotometric quality or, if this grade is not available, the highest quality available. Obtain the assay for the internal standard material and maintain at that purity during use. The recommended internal standard material is 1-propanol; however, selection of an appropriate internal standard material for the particular coating and GC conditions used is the responsibility of each analyst.

7.5 Reference Standard Materials. The reference standard materials are the chemicals cited in Section 1.1 which are of known identity and purity and which are used to assist in the identification and quantification of the analytes of this method. They shall be the highest quality available. Obtain the assays for the reference standard materials and maintain at those purities during use.

7.6 Stock Reference Standards. Stock reference standards are dilutions of the reference standard materials that may be used on a daily basis to prepare calibration standards, calibration check standards, and quality control check standards. Stock reference standards may be prepared from the reference standard materials or purchased as certified solutions.

7.6.1 Stock reference standards should be prepared in dimethylformamide for each analyte expected in the coating samples to be analyzed. The concentrations of analytes in the stock reference standards are not specified but must be adequate to prepare the calibration standards required in the method. A stock reference standard may contain more than one analyte provided all analytes are chemically compatible and no analytes coelute. The actual concentrations prepared must be known to within 0.1 percent (e.g., 0.1000 ± 0.0001 g/g solution). The following procedure is suggested. Place about 35 ml of dimethylformamide into a tared ground-glass stoppered 50 ml volumetric flask. Weigh the flask to the nearest 0.1 mg. Add 12.5 g of the reference standard material and reweigh the flask. Dilute to volume with dimethylformamide and reweigh. Stopper the flask and mix the contents by inverting the flask several times. Calculate the concentration in grams per gram of solution from the net gain in

weights, correcting for the assayed purity of the reference standard material.

NOTE: Although a glass-stoppered volumetric flask is convenient, any suitable glass container may be used because stock reference standards are prepared by weight.

7.6.2 Transfer the stock reference standard solution into one or more Teflon-sealed screw-cap bottles. Store, with minimal headspace, at -10°C to 0°C and protect from light.

7.6.3 Prepare fresh stock reference standards every six months, or sooner if analysis results from daily calibration check standards indicate a problem. Fresh stock reference standards for very volatile HAP's may have to be prepared more frequently.

7.7 Calibration Standards. Calibration standards are used to determine the response of the detector to known amounts of reference material. Calibration standards must be prepared at a minimum of three concentration levels from the stock reference standards (see Section 7.6). Prepare the calibration standards in dimethylformamide (see Section 7.3). The lowest concentration standard should contain a concentration of analyte equivalent either to a concentration of no more than 0.01% of the analyte in a coating or to a concentration that is lower than the actual concentration of the analyte in the coating, whichever concentration is higher. The highest concentration standard should contain a concentration of analyte equivalent to slightly more than the highest concentration expected for the analyte in a coating. The remaining calibration standard should contain a concentration of analyte roughly at the midpoint of the range defined by the lowest and highest concentration calibration standards. The concentration range of the standards should thus correspond to the expected range of analyte concentrations in the prepared coating samples (see Section 11.5). Each calibration standard should contain each analyte for detection by this method expected in the actual coating samples (e.g., some or all of the compounds listed in Section 1.1 may be included). Each calibration standard should also contain an appropriate amount of internal standard material (response for the internal standard material is within 25 to 75 percent of full scale on the attenuation setting for the particular reference standard concentration level). Calibration Standards should be stored for 1 week only in sealed vials with minimal headspace. If the stock reference standards were prepared as specified in Section 7.6, the calibration standards may be prepared by either weighing each addition of the stock reference standard or by adding known volumes of the stock reference standard and calculating the mass of the standard reference material added. Alternative 1 (Section 7.7.1) specifies the procedure to be followed when the

stock reference standard is added by volume. Alternative 2 (Section 7.7.2) specifies the procedure to be followed when the stock reference standard is added by weight.

NOTE: To assist with determining the appropriate amount of internal standard to add, as required here and in other sections of this method, the analyst may find it advantageous to prepare a curve showing the area response versus the amount of internal standard injected into the GC.

7.7.1 Preparation Alternative 1. Determine the amount of each stock reference standard and dimethylformamide solvent needed to prepare approximately 25 ml of the specific calibration concentration level desired. To a tared 25 ml vial that can be sealed with a crimp-on or Mininert® valve, add the total amount of dimethylformamide calculated to be needed. As quickly as practical, add the calculated amount of each stock reference standard using new pipets (or pipet tips) for each stock reference standard. Reweigh the vial and seal it. Using the known weights of the standard reference materials per ml in the stock reference standards, the volumes added, and the total weight of all reagents added to the vial, calculate the weight percent of each standard reference material in the calibration standard prepared. Repeat this process for each calibration standard to be prepared.

7.7.2 Preparation Alternative 2. Determine the amount of each stock reference standard and dimethylformamide solvent needed to prepare approximately 25 ml of the specific calibration concentration level desired. To a tared 25 ml vial that can be sealed with a crimp-on or Mininert® valve, add the total amount of dimethylformamide calculated to be needed. As quickly as practical, add the calculated amount of a stock reference standard using a new pipet (or pipet tip) and reweigh the vial. Repeat this process for each stock reference standard to be added. Seal the vial after obtaining the final weight. Using the known weight percents of the standard reference materials in the stock reference standards, the weights of the stock reference standards added, and the total weight of all reagents added to the vial, calculate the weight percent of each standard reference material in the calibration standard prepared. Repeat this process for each calibration standard to be prepared.

8. Sample Collection, Preservation, Transport, and Storage

8.1 Copies of material safety data sheets (MSDS's) for each sample should be obtained prior to sampling. The MSDS's contain information on the ingredients, and physical and chemical properties data. The MSDS's also contain recommendations for proper handling or required safety precautions. Certified product data sheets (CPDS) may also

include information relevant to the analysis of the coating sample including, but not limited to, separation column, oven temperature, carrier gas, injection port temperature, extraction solvent, and internal standard.

8.2 A copy of the blender's worksheet can be requested to obtain data on the exact coating being sampled. A blank coating data sheet form (see Section 18) may also be used. The manufacturer's formulation information from the product data sheet should also be obtained.

8.3 Prior to sample collection, thoroughly mix the coating to ensure that a representative, homogeneous sample is obtained. It is preferred that this be accomplished using a coating can shaker or similar device; however, when necessary, this may be accomplished using mechanical agitation or circulation systems.

8.3.1 Water-thinned coatings tend to incorporate or entrain air bubbles if stirred too vigorously; mix these types of coatings slowly and only as long as necessary to homogenize.

8.3.2 Each component of multicomponent coatings that harden when mixed must be sampled separately. The component mix ratios must be obtained at the facility at the time of sampling and submitted to the analytical laboratory.

8.4 Sample Collection. Samples must be collected in a manner that prevents or minimizes loss of volatile components and that does not contaminate the coating reservoir. A suggested procedure is as follows. Select a sample collection container which has a capacity at least 25 percent greater than the container in which the sample is to be transported. Make sure both sample containers are clean and dry. Using clean, long-handled tongs, turn the sample collection container upside down and lower it into the coating reservoir. The mouth of the sample collection container should be at approximately the midpoint of the reservoir (do not take the sample from the top surface). Turn the sample collection container over and slowly bring it to the top of the coating reservoir. Rapidly pour the collected coating into the sample container, filling it completely. It is important to fill the sample container completely to avoid any loss of volatiles due to volatilization into the headspace. Return any unused coating to the reservoir or dispose as appropriate.

NOTE: If a company requests a set of samples for its own analysis, a separate set of samples, using new sample containers, should be taken at the same time.

8.5 Once the sample is collected, place the sample container on a firm surface and insert the inner seal in the container by placing the seal inside the rim of the container, inverting a screw cap, and pressing down on the screw cap which will evenly force the

inner seal into the container for a tight fit. Using clean towels or rags, remove all residual coating material from the outside of the sample container after inserting the inner seal. Screw the cap onto the container.

8.5.1 Affix a sample label (see Section 18) clearly identifying the sample, date collected, and person collecting the sample.

8.5.2 Prepare the sample for transportation to the laboratory. The sample should be maintained at the coating's recommended storage temperature specified on the Material Safety Data Sheet, or, if no temperature is specified, the sample should be maintained within the range of 5°C to 38°C.

8.9 The shipping container should adhere to U.S. Department of Transportation specification DOT 12-B. Coating samples are considered hazardous materials; appropriate shipping procedures should be followed.

9. Quality Control

9.1 Laboratories using this method should operate a formal quality control program. The minimum requirements of the program should consist of an initial demonstration of laboratory capability and an ongoing analysis of blanks and quality control samples to evaluate and document quality data. The laboratory must maintain records to document the quality of the data generated. When results indicate atypical method performance, a quality control check standard (see Section 9.4) must be analyzed to confirm that the measurements were performed in an in-control mode of operation.

9.2 Before processing any samples, the analyst must demonstrate, through analysis of a reagent blank, that there are no interferences from the analytical system, glassware, and reagents that would bias the sample analysis results. Each time a set of analytical samples is processed or there is a change in reagents, a reagent blank should be processed as a safeguard against chronic laboratory contamination. The blank samples should be carried through all stages of the sample preparation and measurement steps.

9.3 Required instrument quality control parameters are found in the following sections:

9.3.1 Baseline stability must be demonstrated to be ≤ 5 percent of full scale using the procedures given in Section 10.1.

9.3.2 The GC calibration is not valid unless the retention time (RT) for each analyte at each concentration is within ± 0.05 min of the retention time measured for that analyte in the stock standard.

9.3.3 The retention time (RT) of any sample analyte must be within ± 0.05 min of the average RT of the analyte in the calibration standards for the analyte to be considered tentatively identified.

9.3.4 The GC system must be calibrated as specified in Section 10.2.

9.3.5 A one-point daily calibration check must be performed as specified in Section 10.3.

9.4 To establish the ability to generate results having acceptable accuracy and precision, the analyst must perform the following operations.

9.4.1 Prepare a quality control check standard (QCCS) containing each analyte expected in the coating samples at a concentration expected to result in a response between 25 percent and 75 percent of the limits of the calibration curve when the sample is prepared as described in Section 11.5. The QCCS may be prepared from reference standard materials or purchased as certified solutions. If prepared in the laboratory, the QCCS must be prepared independently from the calibration standards.

9.4.2 Analyze three aliquots of the QCCS according to the method beginning in Section 11.5.3 and calculate the weight percent of each analyte using Equation 1, Section 12.

9.4.3 Calculate the mean weight percent (X) for each analyte from the three results obtained in Section 9.4.2.

9.4.4 Calculate the percent accuracy for each analyte using the known concentrations (Ti) in the QCCS using Equation 3, Section 12.

9.4.5 Calculate the percent relative standard deviation (percent RSD) for each analyte using Equation 7, Section 12, substituting the appropriate values for the relative response factors (RRF's) in said equation.

9.4.6 If the percent accuracy (Section 9.4.4) for all analytes is within the range 90 percent to 110 percent and the percent RSD (Section 9.4.5) for all analytes is ≤ 20 percent, system performance is acceptable and sample analysis may begin. If these criteria are not met for any analyte, then system performance is not acceptable for that analyte and the test must be repeated for those analytes only. Repeated failures indicate a general problem with the measurement system that must be located and corrected. In this case, the entire test, beginning at Section 9.4.1, must be repeated after the problem is corrected.

9.5 Great care must be exercised to maintain the integrity of all standards. It is recommended that all standards be stored at -10°C to 0°C in screw-cap amber glass bottles with Teflon liners.

9.6 Unless otherwise specified, all weights are to be recorded within 0.1 mg.

10. Calibration and Standardization.

10.1 Column Baseline Drift. Before each calibration and series of determinations and before the daily calibration check, condition the column using procedures developed by the laboratory or as specified by the column supplier. Operate the GC at initial (i.e., before sample injection) conditions on the lowest attenuation to be used during sample

analysis. Adjust the recorder pen to zero on the chart and obtain a baseline for at least one minute. Initiate the GC operating cycle that would be used for sample analysis. On the recorder chart, mark the pen position at the end of the simulated sample analysis cycle. Baseline drift is defined as the absolute difference in the pen positions at the beginning and end of the cycle in the direction perpendicular to the chart movement. Calculate the percent baseline drift by dividing the baseline drift by the chart width representing full-scale deflection and multiply the result by 100.

10.2 Calibration of GC. Bring all stock standards and calibration standards to room temperature while establishing the GC at the determined operating conditions.

10.2.1 Retention Times (RT's) for Individual Compounds.

NOTE: The procedures of this subsection are required only for the initial calibration. However, it is good laboratory practice to follow these procedures for some or all analytes before each calibration. The procedures were written for chromatograms output to a strip chart recorder. More modern instruments (e.g., integrators and electronic data stations) determine and print out or display retention times automatically.

The RT for each analyte should be determined before calibration. This provides a positive identification for each peak observed from the calibration standards. Inject an appropriate volume (see NOTE in Section 11.5.2) of one of the stock reference standards into the gas chromatograph and record on the chart the pen position at the time of the injection (see Section 7.6.1). Dilute an aliquot of the stock reference standard as required in dimethylformamide to achieve a concentration that will result in an on-scale response. Operate the gas chromatograph according to the determined procedures. Select the peak(s) that correspond to the analyte(s) [and internal standard, if used] and measure the retention time(s). If a chart recorder is used, measure the distance(s) on the chart from the injection point to the peak maxima. These distances, divided by the chart speed, are defined as the RT's of the analytes in question. Repeat this process for each of the stock reference standard solutions.

NOTE: If gas chromatography with mass spectrometer detection (GC-MS) is used, a stock reference standard may contain a group of analytes, provided all analytes are adequately separated during the analysis. Mass spectral library matching can be used to identify the analyte associated with each peak in the gas chromatogram. The retention time for the analyte then becomes the retention time of its peak in the chromatogram.

10.2.2 Calibration. The GC must be calibrated using a minimum of three concentration levels of each potential analyte. (See Section 7.7 for instructions on preparation of the calibration standards.) Beginning with the lowest concentration level calibration standard, carry out the analysis procedure as described beginning in Section 11.7. Repeat the procedure for each progressively higher concentration level until all calibration standards have been analyzed.

10.2.2.1 Calculate the RT's for the internal standard and for each analyte in the calibration standards at each concentration level as described in Section 10.2.1. The RT's for the internal standard must not vary by more than 0.10 minutes. Identify each analyte by comparison of the RT's for peak maxima to the RT's determined in Section 10.2.1.

10.2.2.2 Compare the retention times (RT's) for each potential analyte in the calibration standards for each concentration level to the retention times determined in Section 10.2.1. The calibration is not valid unless all RT's for all analytes meet the criteria given in Section 9.3.2.

10.2.2.3 Tabulate the area responses and the concentrations for the internal standard and each analyte in the calibration standards. Calculate the response factor for the internal standard (RF_{is}) and the response factor for each compound relative to the internal standard (RRF) for each concentration level using Equations 5 and 6, Section 12.

10.2.2.4 Using the RRF's from the calibration, calculate the percent relative standard deviation (percent RSD) for each analyte in the calibration standard using Equation 7, Section 12. The percent RSD for each individual calibration analyte must be less than 15 percent. This criterion must be met in order for the calibration to be valid. If the criterion is met, the mean RRF's determined above are to be used until the next calibration.

10.3 Daily Calibration Checks. The calibration curve (Section 10.2.2) must be checked and verified at least once each day that samples are analyzed. This is accomplished by analyzing a calibration standard that is at a concentration near the midpoint of the working range and performing the checks in Sections 10.3.1, 10.3.2, and 10.3.3.

10.3.1 For each analyte in the calibration standard, calculate the percent difference in the RRF from the last calibration using Equation 8, Section 12. If the percent difference for each calibration analyte is less than 10 percent, the last calibration curve is assumed to be valid. If the percent difference for any analyte is greater than 5 percent, the analyst should consider this a warning limit. If the percent difference for any one calibration analyte exceeds 10 percent, corrective action must be taken. If no source of the problem can be determined after corrective action has been taken, a new three-point

(minimum) calibration must be generated. This criterion must be met before quantitative analysis begins.

10.3.2 If the RF_{is} for the internal standard changes by more than ± 20 percent from the last daily calibration check, the system must be inspected for malfunctions and corrections made as appropriate.

10.3.3 The retention times for the internal standard and all calibration check analytes must be evaluated. If the retention time for the internal standard or for any calibration check analyte changes by more than 0.10 min from the last calibration, the system must be inspected for malfunctions and corrections made as required.

11. Procedure

11.1 All samples and standards must be allowed to warm to room temperature before analysis. Observe the given order of ingredient addition to minimize loss of volatiles.

11.2 Bring the GC system to the determined operating conditions and condition the column as described in Section 10.1.

NOTE: The temperature of the injection port may be an especially critical parameter. Information about the proper temperature may be found on the CPDS.

11.3 Perform the daily calibration checks as described in Section 10.3. Samples are not to be analyzed until the criteria in Section 10.3 are met.

11.4 Place the as-received coating sample on a paint shaker, or similar device, and shake the sample for a minimum of 5 minutes to achieve homogenization.

11.5 NOTE: The steps in this section must be performed rapidly and without interruption to avoid loss of volatile organics. These steps must be performed in a laboratory hood free from solvent vapors. All weights must be recorded to the nearest 0.1 mg.

11.5.1 Add 16 g of dimethylformamide to each of two tared vials (A and B) capable of being septum sealed.

11.5.2 To each vial add a weight of coating that will result in the response for the major constituent being in the upper half of the linear range of the calibration curve.

NOTE: The magnitude of the response obviously depends on the amount of sample injected into the GC as specified in Section 11.8. This volume must be the same as used for preparation of the calibration curve, otherwise shifts in compound retention times may occur. If a sample is prepared that results in a response outside the limits of the calibration curve, new samples must be prepared; changing the volume injected to bring the response within the calibration curve limits is not permitted.

11.5.3 Add a weight of internal standard to each vial (A and B) that will result in the response for the internal standard being between 25 percent and 75 percent of the linear range of the calibration curve.

11.5.4 Seal the vials with crimp-on or Mininert® septum seals.

11.6 Shake the vials containing the prepared coating samples for 60 seconds. Allow the vials to stand undisturbed for ten minutes. If solids have not settled out on the bottom after 10 minutes, then centrifuge at 1,000 rpm for 5 minutes. The analyst also has the option of injecting the sample without allowing the solids to settle.

11.7 Analyses should be conducted in the following order: daily calibration check sample, method blank, up to 10 injections from sample vials (*i.e.*, one injection each from up to five pairs of vials, which corresponds to analysis of 5 coating samples).

11.8 Inject the prescribed volume of supernatant from the calibration check sample, the method blank, and the sample vials onto the chromatographic column and record the chromatograms while operating the system under the specified operating conditions.

NOTE: The analyst has the option of injecting the unseparated sample.

12. Data Analysis and Calculations

12.1 Qualitative Analysis. An analyte (*e.g.*, those cited in Section 1.1) is considered tentatively identified if two criteria are satisfied: (1) elution of the sample analyte within ± 0.05 min of the average GC retention time of the same analyte in the calibration standard; and (2) either (a) confirmation of the identity of the compound by spectral matching on a gas chromatograph equipped with a mass selective detector or (b) elution of the sample analyte within ± 0.05 min of the average GC retention time of the same analyte in the calibration standard analyzed on a dissimilar GC column.

12.1.1 The RT of the sample analyte must meet the criteria specified in Section 9.3.3.

12.1.2 When doubt exists as to the identification of a peak or the resolution of two or more components possibly comprising one peak, additional confirmatory techniques (listed in Section 12.1) must be used.

12.2 Quantitative Analysis. When an analyte has been identified, the quantification of that compound will be based on the internal standard technique.

12.2.1 A single analysis consists of one injection from each of two sample vials (A and B) prepared using the same coating. Calculate the concentration of each identified analyte in the sample as follows:

$$\text{HAP}_{\text{wt}\%} = 100 \times \frac{(A_x)(W_{\text{is}})}{(A_{\text{is}})(\text{RRF}_x)(W_x)} \quad \text{Eq. (1)}$$

where:

HAP_{wt%} = weight percent of the analyte in coating.

A_x = Area response of the analyte in the sample.

W_{is} = Weight of internal standard added to sample, g.

A_{is} = Area response of the internal standard in the sample.

RRF_x = Mean relative response factor for the analyte in the calibration standards.

W_x = Weight of coating added to the sample solution, g.

12.2.2 Report results for duplicate analysis (sample vials A and B) without correction.

12.3 Precision Data. Calculate the percent difference between the measured concentrations of each analyte in vials A and B as follows.

12.3.1 Calculate the weight percent of the analyte in each of the two sample vials as described in Section 12.2.1.

12.3.2 Calculate the percent difference for each analyte as:

$$\% \text{Dif}_i = 100 \times \frac{|A_i - B_i|}{\frac{(A_i + B_i)}{2}} \quad \text{Eq. (2)}$$

where A_i and B_i are the measured concentrations of the analyte in vials A and B.

12.4 Calculate the percent accuracy for analytes in the QCCS (See Section 9.4) as follows:

$$\% \text{ Accuracy}_x = 100 \times \frac{\bar{X}_x}{T_x} \quad \text{Eq. (3)}$$

where X_x is the mean measured value and T_x is the known true value of the analyte in the QCCS.

12.5 Obtain retention times (RT's) from data station or integrator or, for chromatograms from a chart recorder, calculate the RT's for analytes in the calibration standards (See Section 10.2.2.2) as follows:

$$RT = \frac{\text{Distance from injection to peak maximum}}{\text{Recorder chart speed}} \quad \text{Eq. (4)}$$

12.6 Calculate the response factor for the internal standard (See Section 10.2.2.3) as follows:

$$RF_{is} = \frac{A_{is}}{C_{is}} \quad \text{Eq. (5)}$$

where:

A_{is} = Area response of the internal standard.

C_{is} = Weight percent of the internal standard.

12.7 Calculate the relative response factors for analytes in the calibration standards (See Section 10.2.2.3) as follows:

where:

$$RRF_x = \frac{A_x}{RF_{is} C_x} \quad \text{Eq. (6)}$$

RRF_x = Relative response factor for an individual analyte.

A_x = Area response of the analyte being measured.

C_x = Weight percent of the analyte being measured.

12.8 Calculate the percent relative standard deviation of the relative response factors for analytes in the calibration standards (See Section 10.2.2.4) as follows:

$$\% RSD = 100 \times \frac{\sqrt{\frac{\sum_{i=1}^n (RRF_x - \overline{RRF_x})^2}{n-1}}}{\overline{RRF_x}} \quad \text{Eq. (7)}$$

where:

n = Number of calibration concentration levels used for an analyte.

RRF_x = Individual RRF for an analyte.

$\overline{RRF_x}$ = Mean of all RRF's for an analyte.

12.9 Calculate the percent difference in the relative response factors between the cali-

bration curve and the daily calibration checks (See Section 10.3) as follows:

$$\% \text{ Difference} = \frac{|\overline{\text{RRF}}_x - \text{RRF}_c|}{\overline{\text{RRF}}_x} \times 100 \quad \text{Eq. (8)}$$

where:

$\overline{\text{RRF}}$ = mean relative response factor from last calibration.

RRF = relative response factor from calibration check standard.

13. *Measurement of Reaction Byproducts That are HAP. [Reserved]*

14. *Method Performance. [Reserved]*

15. *Pollution Prevention. [Reserved]*

16. *Waste Management*

16.1 The coating samples and laboratory standards and reagents may contain compounds which require management as hazardous waste. It is the laboratory's responsibility to ensure all wastes are managed in accordance with all applicable laws and regulations.

16.2 To avoid excessive laboratory waste, obtain only enough sample for laboratory analysis.

16.3 It is recommended that discarded waste coating solids, used rags, used paper towels, and other nonglass or nonsharp waste materials be placed in a plastic bag before disposal. A separate container, designated "For Sharp Objects Only," is recommended for collection of discarded glassware and other sharp-edge items used in the laboratory. It is recommended that unused or excess samples and reagents be placed in a solvent-resistant plastic or metal container with a lid or cover designed for flammable liquids. This container should not be stored in the area where analytical work is performed. It is recommended that a record be kept of all compounds placed in the container for identification of the contents upon disposal.

17. References

1. Clean Air Act Amendments, Public Law 101-549, Titles I–XI, November, 1990.

2. Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph. ASTM Designation D3792-79.

3. Standard Practice for Sampling Liquid Paints and Related Pigment Coatings. ASTM Designation D3925-81.

4. Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph. ASTM Designation D4457-85.

5. Standard Test Method for Determining the Unreacted Monomer Content of Latexes Using Capillary Column Gas Chromatography. ASTM Designation D4827-93.

6. Standard Test Method for Determining Unreacted Monomer Content of Latexes Using Gas-Liquid Chromatography. ASTM Designation D 4747-87.

7. Method 301—"Field Validation of Pollutant Measurement Methods from Various Waste Media," 40 CFR 63, Appendix A.

8. "Reagent Chemicals, American Chemical Society Specifications," American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see "Reagent Chemicals and Standards" by Joseph Rosin, D. Van Nostrand Co., Inc., New York, NY and the "United States Pharmacopeia."

18. Tables, Diagrams, Flowcharts, and Validation Data

Agency: _____

Inspector: _____

Date/Time: _____

Sample ID#: _____

Source ID: _____

Coating Name/Type: _____

Plant Witness: _____

Type Analysis Required: _____

Special Handling: _____

Sample Container Label

Coating Data

Date: _____

Source: _____

Data	Sample ID No.	Sample ID No.
Coating:		
Supplier Name
Name and Color of Coating
Type of Coating (primer, clearcoat, etc.)
Identification Number for Coating
Coating Density (lbs/gal)

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Data	Sample ID No.	Sample ID No.
Total Volatiles Content (wt percent)
Water Content (wt percent)
Exempt Solvents Content (wt percent)
VOC Content (wt percent)
Solids Content (vol percent)
Diluent Properties:		
Name.		
Identification Number
Diluent Solvent Density (lbs/gal)
VOC Content (wt percent)
Water Content (wt percent)
Exempt Solvent Content (wt percent)
Diluent/Solvent Ratio (gal diluent solvent/gal coating)

PREPARATION INFORMATION—Continued

8. Fraction Reference Material in Standard (Line 7 ÷ Line 5) soln. _____, g/g

9. Total Volume of Standard Solution. _____, ml

10. Weight Reference Material per ml of Solution (Line 7 ÷ Line 9). _____, g/ml

Laboratory ID No. for this Standard. _____

Expiration Date for this Standard. _____

CALIBRATION STANDARD

Date Prepared: _____
Date Expires: _____
Prepared By: _____
Notebook/page: _____
Calibration Standard Identification No.: _____

Final Weight Flask Plus _____, g
Reagents.
Weight Empty Flask _____, g
Total Weight Of Reagents _____, g

[illegible]^a Include internal standard(s).

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^b Weight percent = weight analyte added ÷ total weight of reagents.

PREPARATION INFORMATION

Final Weight Flask Plus _____,g
Reagents.

Weight Empty Flask ,g

Weight Empty Flask	_____g
Total Weight Of Reagents	_____g

Quality Control Check Standard Identification No.:

[illegible]^a Include internal Standard(s).

^b Weight percent = weight analyte added ÷ total weight of reagents.

OCCS Identification No. _____

Analyst: _____

QCC Expiration Date: _____

ANALYSIS RESULTS

[illegible]

Calibrated By: _____

Calibration Date: _____

PART 1.—RETENTION TIMES FOR INDIVIDUAL ANALYTES

[illegible]

PART 1.—RETENTION TIMES FOR INDIVIDUAL ANALYTES—Continued

Analyte	Stock standard. ID No.	Recorder chart speed		Distance from injection point to peak maximum		Retention time, minutes ^a
		Inches/min.	cm/min.	Inches	Centimeters	
.....
.....
.....
.....
.....
.....
.....
.....
.....

^a Retention time=distance to peak maxima÷chart speed.

CALIBRATION OF GAS CHROMATOGRAPH Calibrated By: _____

Calibration Date: _____

PART 2.—ANALYSIS OF CALIBRATION STANDARDS

Analyte	Calib. STD ID No.	Calib. STD ID No.	Calib. STD ID No.
Name:
Conc. in STD
Area Response
RT
Name:
Conc. in STD
Area Response
RT
Name:
Conc. in STD
Area Response
RT
Name:
Conc. in STD
Area Response
RT
Name:
Conc. in STD
Area Response
RT
Name:
Conc. in STD
Area Response
RT
Internal Standard Name:
Conc. in STD
Area Response
RT

Calibration of Gas Chromatograph Calibrated By: _____

Calibration Date: _____

Analyte	Calib. STD ID	Calib. STD ID	Calib. STD ID	Mean	percent RSD of RF	Is RT within ± 0.05 min of RT for stock? (Y/N)	Is percent RSD <30% (Y/N)
Name:							
RT							
RF							
Name:							
RT							
RF							
Name:							
RT							
RF							
Name:							
RT							
RF							
Name:							
RT							
RF							
Name:							
RT							
RF							

Calibration Check Standard ID No.:

Expiration Date: _____

[illegible]

^b Response factor (RF) change (difference) must be less than 20 percent for each analyte and for the internal standard.

Vial B ID No.: _____

Analyzed By: _____

Date: _____

Sample preparation information	Vial A (g)	Vial B (g)
Measured:		
wt empty vial		
wt plus DMF		
wt plus sample		
wt plus internal		
standard		
Calculated:		
wt DMF		
wt sample		
wt internal standard		

ANALYSIS RESULTS: DUPLICATE SAMPLES

Analyte	Area response		RF	Wt percent in sample		
	Vial A	Vial B		Vial A	Vial B	Average
.....						
.....						
.....						
.....						
.....						
.....						
.....						
.....						
.....						
.....						
Internal Standard						

METHOD 312A—DETERMINATION OF STYRENE IN LATEX STYRENE-BUTADIENE RUBBER, THROUGH GAS CHROMATOGRAPHY

1. Scope and Application

1.1 This method describes a procedure for determining parts per million (ppm) styrene monomer (CAS No. 100-42-5) in aqueous samples, including latex samples and styrene stripper water.

1.2 The sample is separated in a gas chromatograph equipped with a packed column and a flame ionization detector.

2.0 Summary of Method

2.1 This method utilizes a packed column gas chromatograph with a flame ionization detector to determine the concentration of residual styrene in styrene butadiene rubber (SBR) latex samples.

3.0 Definitions

3.1 The definitions are included in the text as needed.

4.0 Interferences

4.1 In order to reduce matrix effects and emulsify the styrene, similar styrene free latex is added to the internal standard. There are no known interferences.

4.2 The operating parameters are selected to obtain resolution necessary to determine styrene monomer concentrations in latex.

5.0 Safety

5.1 It is the responsibility of the user of this procedure to establish appropriate safety and health practices.

6.0 Equipment and Supplies

6.1 Adjustable bottle-top dispenser, set to deliver 3 ml. (for internal standard), Brinkmann Dispensette, or equivalent.

6.2 Pipettor, set to 10 ml., Oxford Macroset, or equivalent.

6.3 Volumetric flask, 100-ml, with stopper.

6.4 Hewlett Packard Model 5710A dual channel gas chromatograph equipped with flame ionization detector.

6.4.1 11 ft. \times $\frac{1}{8}$ in. stainless steel column packed with 10% TCEP on 100/120 mesh Chromosorb P, or equivalent.

6.4.2 Perkin Elmer Model 023 strip chart recorder, or equivalent.

6.5 Helium carrier gas, zero grade.

6.6 Liquid syringe, 25- μ l.

6.7 Digital MicroVAX 3100 computer with VG Multichrom software, or equivalent data handling system.

6.6 Wire Screens, circular, 70-mm, 80-mesh diamond weave.

6.7 DEHA—(N,N-Diethyl hydroxylamine), 97+% purity, CAS No. 3710-84-7

6.8 p-Dioxane, CAS No. 123-91-1

7.0 Reagents and Standards

7.1 Internal standard preparation.

7.1.1 Pipette 5 ml p-dioxane into a 1000-ml volumetric flask and fill to the mark with distilled water and mix thoroughly.

7.2 Calibration solution preparation.

7.2.1 Pipette 10 ml styrene-free latex (eg: NBR latex) into a 100-ml volumetric flask.

7.2.2 Add 3 ml internal standard (section 7.1.1 of this method).

7.2.3 Weigh exactly 10 μ l fresh styrene and record the weight.

7.2.4 Inject the styrene into the flask and mix well.

7.2.5 Add 2 drops of DEHA, fill to the mark with water and mix well again.

7.2.6 Calculate concentration of the calibration solution as follows:

$$\text{mg/l styrene} = (\text{mg styrene added}) / 0.1 \text{ L}$$

8.0 Sample Collection, Preservation, and Storage

8.1 A representative SBR emulsion sample should be caught in a clean, dry 6-oz. teflon lined glass container. Close it properly to assure no sample leakage.

8.2 The container should be labeled with sample identification, date and time.

9.0 Quality Control

9.1 The instrument is calibrated by injecting calibration solution (Section 7.2 of this method) five times.

9.2 The retention time for components of interest and relative response of monomer to the internal standard is determined.

9.3 Recovery efficiency must be determined once for each sample type and whenever modifications are made to the method.

9.3.1 A set of six latex samples shall be collected. Two samples shall be prepared for analysis from each sample. Each sample shall be analyzed in duplicate.

9.3.2 The second set of six latex samples shall be analyzed in duplicate before spiking each sample with approximately 1000 ppm styrene. The spiked samples shall be analyzed in duplicate.

9.3.3 For each hydrocarbon, calculate the average recovery efficiency (R) using the following equations:

where:

$$R = \Sigma(R_n)/6$$

where:

$$R_n = (C_{ns} - C_v)/S_n$$

n=sample number

C_{ns}=concentration of compound measured in spiked sample number n.

C_{nu}= concentration of compound measured in unspiked sample number n.

S_n=theoretical concentration of compound spiked into sample n.

9.3.4 A value of R between 0.70 and 1.30 is acceptable.

9.3.5 R is used to correct all reported results for each compound by dividing the measured results of each compound by the R for that compound for the same sample type.

10.0 Calibration and Instrument Settings

10.1 Injection port temperature, 250°C.

10.2 Oven temperature, 110°C, isothermal.

10.3 Carrier gas flow, 25 cc/min.

10.4 Detector temperature, 250°C.

10.5 Range, 1X.

11.0 Procedure

11.1 Turn on recorder and adjust baseline to zero.

11.2 Prepare sample.

11.2.1 For latex samples, add 3 ml Internal Standard (section 7.1 of this method) to a 100-ml volumetric flask. Pipet 10 ml sample into the flask using the Oxford pipettor, dilute to the 100-ml mark with water, and shake well.

11.2.2 For water samples, add 3 ml Internal Standard (section 7.1 of this method) to a 100-ml volumetric flask and fill to the mark with sample. Shake well.

11.3 Flush syringe with sample.

11.4 Carefully inject 2 µl of sample into the gas chromatograph column injection port and press the start button.

11.5 When the run is complete the computer will print a report of the analysis.

12.0 Data Analysis and Calculation

12.1 For samples that are prepared as in section 11.2.1 of this method:

$$\text{ppm styrene} = A \times D$$

Where:

A = "ppm" readout from computer

D = dilution factor (10 for latex samples)

12.2 For samples that are prepared as in section 11.2.2 of this method, ppm styrene is read directly from the computer.

13.0 Method Performance

13.1 This test has a standard deviation (1) of 3.3 ppm at 100 ppm styrene. The average Spike Recovery from six samples at 1000 ppm Styrene was 96.7 percent. The test method was validated using 926 ppm styrene standard. Six analysis of the same standard provided average 97.7 percent recovery. Note: These are example recoveries and do not replace quality assurance procedures in this method.

14.0 Pollution Prevention

14.1 Waste generation should be minimized where possible. Sample size should be an amount necessary to adequately run the analysis.

15.0 Waste Management

15.1 All waste shall be handled in accordance with Federal and State environmental regulations.

16.0 References and Publications

16.1 40 CFR 63 Appendix A—Method 301 Test Methods Field Validation of Pollutant Measurement

16.2 DSM Copolymer Test Method T-3060, dated October 19, 1995, entitled: *Determination of Residual Styrene in Latex*, Leonard, C.D., Vora, N.M. et al

METHOD 312B—DETERMINATION OF RESIDUAL STYRENE IN STYRENE-BUTADIENE (SBR) RUBBER LATEX BY CAPILLARY GAS CHROMATOGRAPHY

1.0 Scope

1.1 This method is applicable to SBR latex solutions.

1.2 This method quantitatively determines residual styrene concentrations in SBR latex solutions at levels from 80 to 1200 ppm.

2.0 Principle of Method

2.1 A weighed sample of a latex solution is coagulated with an ethyl alcohol (EtOH) solution containing a specific amount of alpha-methyl styrene (AMS) as the internal standard. The extract of this coagulation is then injected into a gas chromatograph and separated into individual components. Quantification is achieved by the method of internal standardization.

3.0 Definitions

3.1 The definitions are included in the text as needed.

4.0 Interferences

[Reserved]

5.0 Safety

5.1 This method may involve hazardous materials, operations, and equipment. This method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

6.0 Equipment and Supplies

6.1 Analytical balance, 160 g capacity, and 0.1 mg resolution

6.2 Bottles, 2-oz capacity, with poly-cap screw lids

6.3 Mechanical shaker

6.4 Syringe, 10- μ l capacity

6.5 Gas chromatograph, Hewlett Packard model 5890A, or equivalent, configured with FID with a megabore jet, splitless injector packed with silanized glass wool.

6.5.1 Establish the following gas chromatographic conditions, and allow the system to thoroughly equilibrate before use.

Injection technique = Splitless

Injector temperature = 225 deg C

Oven temperature = 70 deg C (isothermal)

Detector: temperature = 300 deg C

range = 5

attenuation = 0

Carrier gas: helium = 47 ml/min

Detector gases: hydrogen = 30 ml/min

air = 270 ml/min

make-up = 0 ml/min

Analysis time: = 3.2 min at the specified carrier gas flow rate and column temperature.

6.6 Gas chromatographic column, DB-1, 30 M X 0.53 ID, or equivalent, with a 1.5 micron film thickness.

6.7 Data collection system, Perkin-Elmer/Nelson Series Turbochrom 4 Series 900 Interface, or equivalent.

6.8 Pipet, automatic dispensing, 50-ml capacity, and 2-liter reservoir.

6.9 Flasks, volumetric, class A, 100-ml and 1000-ml capacity.

6.10 Pipet, volumetric delivery, 10-ml capacity, class A.

7.0 Chemicals and Reagents

CHEMICALS:

7.1 Styrene, C₈H₈, 99+%, CAS 100-42-5

7.2 Alpha methyl styrene, C₉H₁₀, 99%, CAS 98-83-9

7.3 Ethyl alcohol, C₂H₅OH, denatured formula 2B, CAS 64-17-5

REAGENTS:

7.4 Internal Standard Stock Solution: 5.0 mg/ml AMS in ethyl alcohol.

7.4.1 Into a 100-ml volumetric flask, weigh 0.50 g of AMS to the nearest 0.1 mg.

7.4.2 Dilute to the mark with ethyl alcohol. This solution will contain 5.0 mg/ml AMS in ethyl alcohol and will be labeled the AMS STOCK SOLUTION.

7.5 Internal Standard Working Solution: 2500 ug/50 ml of AMS in ethyl alcohol.

7.5.1 Using a 10 ml volumetric pipet, quantitatively transfer 10.0 ml of the AMS STOCK SOLUTION into a 1000-ml volumetric flask.

7.5.2 Dilute to the mark with ethyl alcohol. This solution will contain 2500 ug/50ml of AMS in ethyl alcohol and will be labeled the AMS WORKING SOLUTION.

7.5.3 Transfer the AMS WORKING SOLUTION to the automatic dispensing pipet reservoir.

7.6 Styrene Stock Solution: 5.0 mg/ml styrene in ethyl alcohol.

7.6.1 Into a 100-ml volumetric flask, weigh 0.50 g of styrene to the nearest 0.1 mg.

7.6.2 Dilute to the mark with ethyl alcohol. This solution will contain 5.0 mg/ml styrene in ethyl alcohol and will be labeled the STYRENE STOCK SOLUTION.

7.7 Styrene Working Solution: 5000 ug/10 ml of styrene in ethyl alcohol.

7.7.1 Using a 10-ml volumetric pipet, quantitatively transfer 10.0 ml of the STYRENE STOCK SOLUTION into a 100-ml volumetric flask.

7.7.2 Dilute to the mark with ethyl alcohol. This solution will contain 5000 ug/10 ml of styrene in ethyl alcohol and will be labeled the STYRENE WORKING SOLUTION.

8.0 Sample Collection, Preservation and Storage

8.1 Label a 2-oz sample poly-cap lid with the identity, date and time of the sample to be obtained.

8.2 At the sample location, open sample valve for at least 15 seconds to ensure that the sampling pipe has been properly flushed with fresh sample.

8.3 Fill the sample jar to the top (no headspace) with sample, then cap it tightly.

8.4 Deliver sample to the Laboratory for testing within one hour of sampling.

8.5 Laboratory testing will be done within two hours of the sampling time.

8.6 No special storage conditions are required unless the storage time exceeds 2 hours in which case refrigeration of the sample is recommended.

9.0 Quality Control

9.1 For each sample type, 12 samples of SBR latex shall be obtained from the process for the recovery study. Half the vials and caps shall be tared, labeled "spiked", and numbered 1 through 6. The other vials are labeled "unspiked" and need not be tared, but are also numbered 1 through 6.

9.2 The six vials labeled "spiked" shall be spiked with an amount of styrene to approximate 50% of the solution's expected residual styrene level.

9.3 The spiked samples shall be shaken for several hours and allowed to cool to room temperature before analysis.

9.4 The six samples of unspiked solution shall be coagulated and a mean styrene value shall be determined, along with the standard deviation, and the percent relative standard deviation.

9.5 The six samples of the spiked solution shall be coagulated and the results of the analyses shall be determined using the following equations:

$$M_r = M_s - M_u$$

$$R = M_r / S$$

where:

M_u = Mean value of styrene in the unspiked sample

M_s = Measured amount of styrene in the spiked sample

M_r = Measured amount of the spiked compound

S = Amount of styrene added to the spiked sample

R = Fraction of spiked styrene recovered

9.6 A value of R between 0.70 and 1.30 is acceptable.

9.7 R is used to correct all reported results for each compound by dividing the measured results of each compound by the R for that compound for the same sample type.

10.0 Calibration

10.1 Using a 10-ml volumetric pipet, quantitatively transfer 10.0 ml of the STYRENE WORKING SOLUTION (section 7.7.2 of this method) into a 2-oz bottle.

10.2 Using the AMS WORKING SOLUTION equipped with the automatic dispensing pipet (section 7.5.3 of this method), transfer 50.0 ml of the internal standard solution into the 2-oz bottle.

10.3 Cap the 2-oz bottle and swirl. This is the calibration standard, which contains 5000 µg of styrene and 2500 µg of AMS.

10.4 Using the conditions prescribed (section 6.5 of this method), chromatograph 1 µl of the calibration standard.

10.5 Obtain the peak areas and calculate the relative response factor as described in

the calculations section (section 12.1 of this method).

11.0 Procedure

11.1 Into a tared 2-oz bottle, weigh 10.0 g of latex to the nearest 0.1 g.

11.2 Using the AMS WORKING SOLUTION equipped with the automatic dispensing pipet (section 7.5.3 of this method), transfer 50.0 ml of the internal standard solution into the 2-oz bottle.

11.3 Cap the bottle. Using a mechanical shaker, shake the bottle for at least one minute or until coagulation of the latex is complete as indicated by a clear solvent.

11.4 Using the conditions prescribed (section 6.5 of this method), chromatograph 1 µl of the liquor.

11.5 Obtain the peak areas and calculate the concentration of styrene in the latex as described in the calculations section (Section 12.2 of this method).

12.0 Calculations

12.1 Calibration:

$$RF = (W_x \times A_{is}) / (W_{is} \times A_x)$$

where:

RF = the relative response factor for styrene

W_x = the weight (µg) of styrene

A_{is} = the area of AMS

W_{is} = the weight (µg) of AMS

A_x = the area of styrene

12.2 Procedure:

$$\text{ppm}_{\text{styrene}} = (A_x \times RF \times W_{is}) / (A_{is} \times W_s)$$

where:

$\text{ppm}_{\text{styrene}}$ = parts per million of styrene in the latex

A_x = the area of styrene

RF = the response factor for styrene

W_{is} = the weight (µg) of AMS

A_{is} = the area of AMS

W_s = the weight (g) of the latex sample

12.3 Correct for recovery (R) as determined by section 9.0 of this method.

13.0 Precision

13.1 Precision for the method was determined at the 80, 144, 590, and 1160 ppm levels. The standard deviations were 0.8, 1.5, 5 and 9 ppm respectively. The percent relative standard deviations (%RSD) were 1% or less at all levels. Five degrees of freedom were used for all precision data except at the 80 ppm level, where nine degrees of freedom were used. Note: These are example results and do not replace quality assurance procedures in this method.

14.0 Pollution Prevention

14.1 Waste generation should be minimized where possible. Sample size should be an amount necessary to adequately run the analysis.

15.0 Waste Management

15.1 Discard liquid chemical waste into the chemical waste drum.

15.2 Discard latex sample waste into the latex waste drum.

15.3 Discard polymer waste into the polymer waste container.

16.0 References

16.1 This method is based on Goodyear Chemical Division Test Method E-889.

METHOD 312C—DETERMINATION OF RESIDUAL STYRENE IN SBR LATEX PRODUCED BY EMULSION POLYMERIZATION

1.0 Scope

1.1 This method is applicable for determining the amount of residual styrene in SBR latex as produced in the emulsion polymerization process.

2.0 Principle of Method

2.1 A weighed sample of latex is coagulated in 2-propanol which contains alpha-methyl styrene as an Internal Standard. The extract from the coagulation will contain the alpha-methyl styrene as the Internal Standard and the residual styrene from the latex. The extract is analyzed by a Gas Chromatograph. Percent styrene is calculated by relating the area of the styrene peak to the area of the Internal Standard peak of known concentration.

3.0 Definitions

3.1 The definitions are included in the text as needed.

4.0 Interferences

[Reserved]

5.0 Safety

5.1 When using solvents, avoid contact with skin and eyes. Wear hand and eye protection. Wash thoroughly after use.

5.2 Avoid overexposure to solvent vapors. Handle only in well ventilated areas.

6.0 Equipment and Supplies

6.1 *Gas Chromatograph*—Hewlett Packard 5890, Series II with flame ionization detector, or equivalent.

Column—HP 19095F-123, 30m × 0.53mm, or equivalent. Substrate HP FFAP (cross-linked) film thickness 1 micrometer. Glass injector port liners with silanized glass wool plug.

Integrator—HP 3396, Series II, or equivalent.

6.2 Wrist action shaker

6.3 Automatic dispenser

6.4 Automatic pipet, calibrated to deliver 5.0 ± 0.01 grams of latex

6.5 Four-ounce wide-mouth bottles with foil lined lids

6.6 Crimp cap vials, 2ml, teflon lined septa

6.7 Disposable pipets

6.8 Qualitative filter paper

6.9 Cap crimper

6.10 Analytical balance

6.11 10ml pipette

6.12 Two-inch funnel

7.0 Reagents and Standards

7.1 2-Propanol (HP2C grade)

7.2 Alpha methyl styrene (99+% purity)

7.3 Styrene (99+% purity)

7.4 Zero air

7.5 Hydrogen (chromatographic grade)

7.6 Helium

7.7 Internal Standard preparation

7.7.1 Weigh 5.000-5.005 grams of alpha-methyl styrene into a 100ml volumetric flask and bring to mark with 2-propanol to make Stock "A" Solution.

NOTE: Shelf life—6 months.

7.7.2 Pipette 10ml of Stock "A" Solution into a 100ml volumetric flask and bring to mark with 2-propanol to prepare Stock "B" Solution.

7.7.3 Pipette 10ml of the Stock "B" solution to a 1000ml volumetric flask and bring to the mark with 2-propanol. This will be the Internal Standard Solution (0.00005 grams/ml).

7.8 Certification of Internal Standard—Each batch of Stock "B" Solution will be certified to confirm concentration.

7.8.1 Prepare a Standard Styrene Control Solution in 2-propanol by the following method:

7.8.1.1 Weigh 5.000 ± 0.005g of styrene to a 100ml volumetric flask and fill to mark with 2-propanol to make Styrene Stock "A" Solution.

7.8.1.2 Pipette 10ml of Styrene Stock "A" Solution to a 100ml volumetric flask and fill to mark with 2-propanol to make Styrene Stock "B" Solution.

7.8.1.3 Pipette 10ml of Styrene Stock "B" solution to a 250ml volumetric flask and fill to mark with 2-propanol to make the Certification Solution.

7.8.2 Certify Alpha-Methyl Styrene Stock "B" Solution.

7.8.2.1 Pipette 5ml of the Certification Solution and 25ml of the Alpha Methyl Styrene Internal Standard Solution to a 4-oz. bottle, cap and shake well.

7.8.2.2 Analyze the resulting mixture by GC using the residual styrene method. (11.4-11.6 of this method)

7.8.2.3 Calculate the weight of alpha methyl styrene present in the 25ml aliquot of the new Alpha Methyl Styrene Standard by the following equation:

$$W_x = F_x \times W_{is} (A_x/A_{is})$$

Where

A_x = Peak area of alpha methyl styrene

A_{is} = Peak area of styrene
 W_x = Weight of alpha methyl styrene
 W_{is} = Weight of styrene (.00100)
 F_x = Analyzed response factor = 1

The Alpha Methyl Styrene Stock Solution used to prepare the Internal Standard Solution may be considered certified if the weight of alpha methyl styrene analyzed by this method is within the range of .00121g to .00129g.

8.0 Sampling

8.1 Collect a latex sample in a capped container. Cap the bottle and identify the sample as to location and time.

8.2 Deliver sample to Laboratory for testing within one hour.

8.3 Laboratory will test within two hours.

8.4 No special storage conditions are required.

9.0 Quality Control

9.1 The laboratory is required to operate a formal quality control program. This consists of an initial demonstration of the capability of the method as well as ongoing analysis of standards, blanks, and spiked samples to demonstrate continued performance.

9.1.1 When the method is first set up, a calibration is run and the recovery efficiency for each type of sample must be determined.

9.1.2 If new types of samples are being analyzed, then recovery efficiency for each new type of sample must be determined. New type includes any change, such as polymer type, physical form or a significant change in the composition of the matrix.

9.2 Recovery efficiency must be determined once for each sample type and whenever modifications are made to the method.

9.2.1 In determining the recovery efficiency, the quadruplet sampling system shall be used. Six sets of samples (for a total of 24) shall be taken. In each quadruplet set, half of the samples (two out of the four) shall be spiked with styrene.

9.2.2 Prepare the samples as described in section 8 of this method. To the vials labeled "spiked", add a known amount of styrene that is expected to be present in the latex.

9.2.3 Run the spiked and unspiked samples in the normal manner. Record the concentrations of styrene reported for each pair of spiked and unspiked samples with the same vial number.

9.2.4 For each hydrocarbon, calculate the average recovery efficiency (R) using the following equation:

$$R = \Sigma(R_n)/12$$

Where: n = sample number

$$R_n = (M_s - M_u)/S$$

M_s = total mass of compound (styrene) measured in spiked sample (μ g)

M_u = total mass of compound (styrene) measured in unspiked sample (μ g)

S = theoretical mass of compound (styrene) spiked into sample (μ g)

R = fraction of spiked compound (styrene) recovered

9.2.5 A different R value should be obtained for each sample type. A value of R between 0.70 and 1.30 is acceptable.

9.2.6 R is used to correct all reported results for each compound by dividing the measured results of each compound by the R for that compound for the same sample type.

10.0 Calibration

A styrene control sample will be tested weekly to confirm the FID response and calibration.

10.1 Using the Styrene Certification Solution prepared in 7.8.1, perform test analysis as described in 7.8.2 using the equation in 7.8.2.3 to calculate results.

10.2 Calculate the weight of styrene in the styrene control sample using the following equation:

$$W_{sty} = (F_x \times A_{sty} \times W_{is}) / A_{is}$$

The instrument can be considered calibrated if the weight of the styrene analyzed is within range of 0.00097–0.00103gms.

11.0 Procedure

11.1 Using an auto pipet, add 25ml of Internal Standard Solution to a 4 oz. wide-mouth bottle.

11.2 Using a calibrated auto pipet, add 5.0 ± 0.01 g latex to the bottle containing the 25ml of Internal Standard Solution.

11.3 Cap the bottle and place on the wrist action shaker. Shake the sample for a minimum of five minutes using the timer on the shaker. Remove from shaker.

11.4 Using a disposable pipet, fill the 2ml sample vial with the clear alcohol extract. (If the extract is not clear, it should be filtered using a funnel and filter paper.) Cap and seal the vial.

11.5 Place the sample in the autosampler tray and start the GC and Integrator. The sample will be injected into the GC by the auto-injector, and the Integrator will print the results.

11.6 Gas Chromatograph Conditions

Oven Temp—70 °C

Injector Temp—225 °C

Detector Temp—275 °C

Helium Pressure—500 KPA

Column Head Pressure—70 KPA

Makeup Gas—30 ml/min.

Column—HP 19095F—123, 30m x 0.53mm

Substrate: HP—FFAP (cross-linked) 1 micrometer film thickness

12.0 Calculations

12.1 The integrator is programmed to do the following calculation at the end of the analysis:

$$\% \text{Residual Styrene} = (A_x \cdot XW_{is}) / (A_{is} \cdot XW_x) \cdot XF_x \cdot 100$$

Where:

A_x = Peak area of styrene

A_{is} = Peak area of internal standard

W_x = Weight of sample = 5g

W_{is} = Weight of internal std. = 0.00125g

F_x = Analyzed response factor = 1.0

12.2 The response factor is determined by analyzing a solution of 0.02g of styrene and 0.02g of alpha methyl styrene in 100ml of 2-propanol. Calculate the factor by the following equation:

$$F_x = (W_x \cdot A_{is}) / (W_{is} \cdot A_x)$$

Where:

W_x = Weight of styrene

A_x = Peak area of styrene

W_{is} = Weight of alpha methyl styrene

A_{is} = Peak area of alpha methyl styrene

13.0 Method Performance

13.1 Performance must be determined for each sample type by following the procedures in section 9 of this method.

14.0 Waste Generation

14.1 Waste generation should be minimized where possible.

15.0 Waste Management

15.1 All waste shall be handled in accordance with Federal and State environmental regulations.

16.0 References

[Reserved]

METHOD 313A—DETERMINATION OF RESIDUAL HYDROCARBONS IN RUBBER CRUMB

1.0 Scope and Application

1.1 This method determines residual toluene and styrene in stripper crumb of the of the following types of rubber: polybutadiene (PBR) and styrene/butadiene rubber (SBR), both derived from solution polymerization processes that utilize toluene as the polymerization solvent.

1.2 The method is applicable to a wide range of concentrations of toluene and styrene provided that calibration standards cover the desired range. It is applicable at least over the range of 0.01 to 10.0 % residual toluene and from 0.1 to 3.0 % residual styrene. It is probably applicable over a wider range, but this must be verified prior to use.

1.3 The method may also be applicable to other process samples as long as they are of a similar composition to stripper crumb. See section 3.1 of this method for a description of stripper crumb.

2.0 Summary of Method

2.1 The wet crumb is placed in a sealed vial and run on a headspace sampler which heats the vial to a specified temperature for

a specific time and then injects a known volume of vapor into a capillary GC. The concentration of each component in the vapor is proportional to the level of that component in the crumb sample and does not depend on water content of the crumb.

2.2 Identification of each component is performed by comparing the retention times to those of known standards.

2.3 Results are calculated by the external standard method since injections are all performed in an identical manner. The response for each component is compared with that obtained from dosed samples of crumb.

2.4 Measured results of each compound are corrected by dividing each by the average recovery efficiency determined for the same compound in the same sample type.

3.0 Definitions

3.1 Stripper crumb refers to pieces of rubber resulting from the steam stripping of a toluene solution of the same polymer in a water slurry. The primary component of this will be polymer with lesser amounts of entrained water and residual toluene and other hydrocarbons. The amounts of hydrocarbons present must be such that the crumb is a solid material, generally less than 10 % of the dry rubber weight.

4.0 Interferences

4.1 Contamination is not normally a problem since samples are sealed into vials immediately on sampling.

4.2 Cross contamination in the headspace sampler should not be a problem if the correct sampler settings are used. This should be verified by running a blank sample immediately following a normal or high sample. Settings may be modified if necessary if this proves to be a problem, or a blank sample may be inserted between samples.

4.3 Interferences may occur if volatile hydrocarbons are present which have retention times close to that of the components of interest. Since the solvent makeup of the processes involved are normally fairly well defined this should not be a problem. If it is found to be the case, switching to a different chromatographic column will probably resolve the situation.

5.0 Safety

5.1 The chemicals specified in this method should all be handled according to standard laboratory practices as well as any special precautions that may be listed in the MSDS for that compound.

5.2 Sampling of strippers or other process streams may involve high pressures and temperatures or may have the potential for exposure to chemical fumes. Only personnel who have been trained in the specific sampling procedures required for that process

should perform this operation. An understanding of the process involved is necessary. Proper personal protective equipment should be worn. Any sampling devices should be inspected prior to use. A detailed sampling procedure which specifies exactly how to obtain the sample must be written and followed.

6.0 Equipment and Supplies

6.1 Hewlett Packard (HP) 7694 Headspace sampler, or equivalent, with the following conditions:

Times (min.): GC cycle time 6.0 , vial equilibration 30.0 , pressurization 0.25 , loop fill 0.25, loop equilibration 0.05 , inject 0.25

Temperatures (deg C): oven 70, loop 80, transfer line 90

Pressurization gas: He @ 16 psi

6.2 HP 5890 Series II capillary gas chromatograph, or equivalent, with the following conditions:

Column: Supelco SPB-1, or equivalent, 15m x .25mm x .25µ film

Carrier: He @ 6 psi

Run time: 4 minutes

Oven: 70 deg C isothermal

Injector: 200 deg C split ratio 50:1

Detector: FID @ 220 deg C

6.3 HP Chemstation consisting of computer, printer and Chemstation software, or an equivalent chromatographic data system.

6.4 20 ml headspace vials with caps and septa.

6.5 Headspace vial crimper.

6.6 Microliter pipetting syringes.

6.7 Drying oven at 100 deg C vented into cold trap or other means of trapping hydrocarbons released.

6.8 Laboratory shaker or tumbler suitable for the headspace vials.

6.9 Personal protective equipment required for sampling the process such as rubber gloves and face and eye protection.

7.0 Reagents and Standards

7.1 Toluene, 99.9+% purity, HPLC grade.

7.2 Styrene, 99.9+% purity, HPLC grade.

7.3 Dry rubber of same type as the strip-per crumb samples.

8.0 Sample Collection, Preservation and Storage

8.1 Collect a sample of crumb in a manner appropriate for the process equipment being sampled.

8.1.1 If conditions permit, this may be done by passing a stream of the crumb slurry through a strainer, thus separating the crumb from the water. Allow the water to drain freely, do not attempt to squeeze any water from the crumb. Results will not depend on the exact water content of the samples. Immediately place several pieces of

crumb directly into a headspace vial. This should be done with rubber gloves to protect the hands from both the heat and from contact with residual hydrocarbons. The vial should be between ¼ and ½ full. Results do not depend on sample size as long as there is sufficient sample to reach an equilibrium vapor pressure in the headspace of the vial. Cap and seal the vial. Prepare each sample at least in duplicate. This is to minimize the effect of the variation that naturally occurs in the composition of non homogeneous crumb. The free water is not analyzed by this method and should be disposed of appropriately along with any unused rubber crumb.

8.1.2 Alternatively the process can be sampled in a specially constructed sealed bomb which can then be transported to the laboratory. The bomb is then cooled to ambient temperature by applying a stream of running water. The bomb can then be opened and the crumb separated from the water and the vials filled as described in section 8.1.1 of this method. The bomb may be stored up to 8 hours prior to transferring the crumb into vials.

8.2 The sealed headspace vials may be run immediately or may be stored up to 72 hours prior to running. It is possible that even longer storage times may be acceptable, but this must be verified for the particular type of sample being analyzed (see section 9.2.3 of this method). The main concern here is that some types of rubber eventually may flow, thus compacting the crumb so that the surface area is reduced. This may have some effect on the headspace equilibration.

9.0 Quality Control

9.1 The laboratory is required to operate a formal quality control program. This consists of an initial demonstration of the capability of the method as well as ongoing analysis of standards, blanks and spiked samples to demonstrate continued performance.

9.1.1 When the method is first set up a calibration is run (described in section 10 of this method) and an initial demonstration of method capability is performed (described in section 9.2 of this method). Also recovery efficiency for each type of sample must be determined (see section 9.4 of this method).

9.1.2 It is permissible to modify this method in order to improve separations or make other improvements, provided that all performance specifications are met. Each time a modification to the method is made it is necessary to repeat the calibration (section 10 of this method), the demonstration of method performance (section 9.2 of this method) and the recovery efficiency for each type of sample (section 9.4 of this method).

9.1.3 Ongoing performance should be monitored by running a spiked rubber standard. If this test fails to demonstrate that the analysis is in control, then corrective action

must be taken. This method is described in section 9.3 of this method.

9.1.4 If new types of samples are being analyzed then recovery efficiency for each new type of sample must be determined. New type includes any change, such as polymer type, physical form or a significant change in the composition of the matrix.

9.2 Initial demonstration of method capability to establish the accuracy and precision of the method. This is to be run following the calibration described in section 10 of this method.

9.2.1 Prepare a series of identical spiked rubber standards as described in section 9.3 of this method. A sufficient number to determine statistical information on the test should be run. Ten may be a suitable number, depending on the quality control methodology used at the laboratory running the tests. These are run in the same manner as unknown samples (see section 11 of this method).

9.2.2 Determine mean and standard deviation for the results. Use these to determine the capability of the method and to calculate suitable control limits for the ongoing performance check which will utilize the same standards.

9.2.3 Prepare several additional spiked rubber standards and run 2 each day to determine the suitability of storage of the samples for 24, 48 and 72 hours or longer if longer storage times are desired.

9.3 A spiked rubber standard should be run on a regular basis to verify system performance. This should probably be done daily if samples are run daily. This is prepared in the same manner as the calibration standards (section 10.1 of this method), except that only one concentration of toluene and styrene is prepared. Choose concentrations of toluene and styrene that fall in the middle of the range expected in the stripper crumb and then do not change these unless there is a major change in the composition of the unknowns. If it becomes necessary to change the composition of this standard the initial performance demonstration must be repeated with the new standard (section 9.2 of this method).

9.3.1 Each day prepare one spiked rubber standard to be run the following day. The dry rubber may be prepared in bulk and stored for any length of time consistent with the shelf life of the product. The addition of water and hydrocarbons must be performed daily and all the steps described under section 10.1 of this method must be followed.

9.3.2 Run the spiked rubber standard prepared the previous day. Record the results and plot on an appropriate control chart or other means of determining statistical control.

9.3.3 If the results for the standard indicate that the test is out of control then corrective action must be taken. This may in-

clude a check on procedures, instrument settings, maintenance or recalibration. Samples may be stored (see section 8.2 of this method) until compliance is demonstrated.

9.4 Recovery efficiency must be determined once for each sample type and whenever modifications are made to the method.

9.4.1 For each sample type collect 12 samples from the process (section 8.1 of this method). This should be done when the process is operating in a normal manner and residual hydrocarbon levels are in the normal range. Half the vials and caps should be tared, labeled "spiked" and numbered 1 through 6. The other vials are labeled "unspiked" and need not be tared but are also numbered 1 through 6. Immediately on sampling, the vials should be capped to prevent loss of volatiles. Allow all the samples to cool completely to ambient temperature. Reweigh each of the vials labeled "spiked" to determine the weight of wet crumb inside.

9.4.2 The dry weight of rubber present in the wet crumb is estimated by multiplying the weight of wet crumb by the fraction of nonvolatiles typical for the sample. If this is not known, an additional quantity of crumb may be sampled, weighed, dried in an oven and reweighed to determine the fraction of volatiles and nonvolatiles prior to starting this procedure.

9.4.3 To the vials labeled "spiked" add an amount of a mixture of toluene and styrene that is between 40 and 60 % of the amount expected in the crumb. This is done by removing the cap, adding the mixture by syringe, touching the tip of the needle to the sample in order to remove the drop and then immediately recapping the vials. The mixture is not added through the septum, because a punctured septum may leak and vent vapors as the vial is heated. The weights of toluene and styrene added may be calculated from the volumes of the mixture added, its composition and density, or may be determined by the weight of the vials and caps prior to and after addition. The exact dry weight of rubber present and the concentration of residual toluene and styrene are not known at this time so an exact calculation of the concentration of hydrocarbons is not possible until the test is completed.

9.4.4 Place all the vials onto a shaker or tumbler for 24 ± 2 hours. This is essential in order for the hydrocarbons to be evenly distributed and completely absorbed into the rubber. If this is not followed the toluene and styrene will be mostly at the surface of the rubber and high results will be obtained.

9.4.5 Remove the vials from the shaker and tap them so that all the crumb settles to the bottom of the vials. Allow them to stand for 1 hour prior to analysis to allow any liquid to drain fully to the bottom.

9.4.6 Run the spiked and unspiked samples in the normal manner. Record the concentrations of toluene and styrene reported for

each pair of spiked and unspiked samples with the same vial number.

9.4.7 Open each of the vials labeled “spiked”, remove all the rubber crumb and place it into a tarred drying pan. Place in a 100 deg C oven for two hours, cool and re-weigh. Subtract the weight of the tare to give the dry weight of rubber in each spiked vial. Calculate the concentration of toluene and styrene spiked into each vial as percent of dry rubber weight. This will be slightly different for each vial since the weights of dry rubber will be different.

9.4.8 For each hydrocarbon calculate the average recovery efficiency (R) using the following equations:

$$R = \frac{R_{\Sigma}(P_n)}{6} \text{ (average of the 6 individual } R_n \text{ values)}$$

Where:

$$R_n = (C_{ns} - C_{nu}) / S_n$$

Where:

n=vial number

Cns=concentration of compound measured in spiked sample number n.

Cnu=concentration of compound measured in unspiked sample number n.

Sn=theoretical concentration of compound spiked into sample n calculated in step 9.4.7

9.4.9 A different R value should be obtained for each compound (styrene and toluene) and for each sample type.

9.4.10 A value of R between 0.70 and 1.30 is acceptable.

9.4.11 R is used to correct all reported results for each compound by dividing the measured results of each compound by the R for that compound for the same sample type (see section 12.2 of this method.)

10.0 Calibration

10.1 Calibration standards are prepared by dosing known amounts of the hydrocarbons of interest into vials containing known amounts of rubber and water.

10.1.1 Cut a sufficient quantity of dry rubber of the same type as will be analyzed into pieces about the same size as that of the crumb. Place these in a single layer on a piece of aluminum foil or other suitable surface and place into a forced air oven at 100° C for four hours. This is to remove any residual hydrocarbons that may be present. This step may be performed in advance.

10.1.2 Into each of a series of vials add 3.0 g of the dry rubber.

10.1.3 Into each vial add 1.0 ml distilled water or an amount that is close to the amount that will be present in the unknowns. The exact amount of water present does not have much effect on the analysis, but it is necessary to have a saturated environment. The water will also aid in the uniform distribution of the spiked hydrocarbons over the surface of the rubber after the vials

are placed on the shaker (in step 10.1.5 of this method).

10.1.4 Into each vial add varying amounts of toluene and styrene by microliter syringe and cap the vials immediately to prevent loss. The tip of the needle should be carefully touched to the rubber in order to transfer the last drop to the rubber. Toluene and styrene may first be mixed together in suitable proportions and added together if desired. The weights of toluene and styrene added may be calculated from the volumes of the mixture added, its composition and density, or may be determined by the weight of the vials and caps prior to and after addition. Concentrations of added hydrocarbons are calculated as percent of the dry rubber weight. At least 5 standards should be prepared with the amounts of hydrocarbons added being calculated to cover the entire range possible in the unknowns. Retain two samples with no added hydrocarbons as blanks.

10.1.5 Place all the vials onto a shaker or tumbler for 24 ± 2 hours. This is essential in order for the hydrocarbons to be evenly distributed and completely absorbed into the rubber. If this is not followed the toluene and styrene will be mostly at the surface of the rubber and high results will be obtained.

10.1.6 Remove the vials from the shaker and tap them so that all the crumb settles to the bottom of the vials. Allow them to stand for 1 hour prior to analysis to allow any liquid to drain fully to the bottom.

10.2 Run the standards and blanks in the same manner as described for unknowns (section 11 of this method), starting with a blank, then in order of increasing hydrocarbon content and ending with the other blank.

10.3 Verify that the blanks are sufficiently free from toluene and styrene or any interfering hydrocarbons.

10.3.1 It is possible that trace levels may be present even in dry product. If levels are high enough that they will interfere with the calibration then the drying procedure in section 10.1.1 of this method should be reviewed and modified as needed to ensure that suitable standards can be prepared.

10.3.2 It is possible that the final blank is contaminated by the previous standard. If this is the case review and modify the sampler parameters as needed to eliminate this problem. If necessary it is possible to run blank samples between regular samples in order to reduce this problem, though it should not be necessary if the sampler is properly set up.

10.4 Enter the amounts of toluene and styrene added to each of the samples (as calculated in section 10.1.4 of this method) into the calibration table and perform a calibration utilizing the external standard method of analysis.

10.5 At low concentrations the calibration should be close to linear. If a wide range of levels are to be determined it may be desirable to apply a nonlinear calibration to get the best fit.

11.0 Procedure

11.1 Place the vials in the tray of the headspace sampler. Enter the starting and ending positions through the console of the sampler. For unknown samples each is run in duplicate to minimize the effect of variations in crumb composition. If excessive variation is noted it may be desirable to run more than two of each sample.

11.2 Make sure the correct method is loaded on the Chemstation. Turn on the gas flows and light the FID flame.

11.3 Start the sequence on the Chemstation. Press the START button on the headspace unit. The samples will be automatically injected after equilibrating for 30 minutes in the oven. As each sample is completed the Chemstation will calculate and print out the results as percent toluene and styrene in the crumb based on the dry weight of rubber.

12.0 Data Analysis and Calculations

12.1 For each set of duplicate samples calculate the average of the measured concentration of toluene and styrene. If more than two replicates of each sample are run calculate the average over all replicates.

12.2 For each sample correct the measured amounts of toluene and styrene using the following equation:

$$\text{Corrected Result} = C_m/R$$

Where:

C_m = Average measured concentration for that compound.

R = Recovery efficiency for that compound in the same sample type (see section 9.4 of this method)

12.3 Report the recovery efficiency (R) and the corrected results of toluene and styrene for each sample.

13.0 Method Performance

13.1 This method can be very sensitive and reproducible. The actual performance depends largely on the exact nature of the samples being analyzed. Actual performance must be determined by each laboratory for each sample type.

13.2 The main source of variation is the actual variation in the composition of non homogeneous crumb in a stripping system and the small sample sizes employed here. It therefore is the responsibility of each laboratory to determine the optimum number of replicates of each sample required to obtain accurate results.

14.0 Pollution Prevention

14.1 Samples should be kept sealed when possible in order to prevent evaporation of hydrocarbons.

14.2 When drying of samples is required it should be done in an oven which vents into a suitable device that can trap the hydrocarbons released.

14.3 Dispose of samples as described in section 15.

15.0 Waste Management

15.1 Excess stripper crumb and water as well as the contents of the used sample vials should be properly disposed of in accordance with local and federal regulations.

15.2 Preferably this will be accomplished by having a system of returning unused and spent samples to the process.

16.0 References

16.1 "HP 7694 Headspace Sampler—Operating and Service Manual", Hewlett-Packard Company, publication number G1290-90310, June 1993.

METHOD 313B—THE DETERMINATION OF RESIDUAL HYDROCARBON IN SOLUTION POLYMERS BY CAPILLARY GAS CHROMATOGRAPHY

1.0 Scope

1.1 This method is applicable to solution polymerized polybutadiene (PBD).

1.2 This method quantitatively determines n-hexane in wet crumb polymer at levels from 0.08 to 0.15% by weight.

1.3 This method may be extended to the determination of other hydrocarbons in solution produced polymers with proper experimentation and documentation.

2.0 Principle of Method

2.1 A weighed sample of polymer is dissolved in chloroform and the cement is coagulated with an isopropyl alcohol solution containing a specific amount of alpha-methyl styrene (AMS) as the internal standard. The extract of this coagulation is then injected into a gas chromatograph and separated into individual components. Quantification is achieved by the method of internal standardization.

3.0 Definitions

3.1 The definitions are included in the text as needed.

4.0 Interferences

[Reserved]

5.0 Safety

5.1 This method may involve hazardous materials, operations, and equipment. This method does not purport to address all of the safety problems associated with its use. It is

the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

6.0 Equipment and Supplies

6.1 Analytical balance, 160 g capacity, 0.1 mg resolution

6.2 Bottles, 2-oz capacity with poly-cap screw lids

6.3 Mechanical shaker

6.4 Syringe, 10- μ l capacity

6.5 Syringe, 2.5-ml capacity, with 22 gauge 1.25 inch needle, PP/PE material, disposable

6.6 Gas chromatograph, Hewlett-Packard model 5890, or equivalent, configured with FID, split injector packed with silanized glass wool.

6.6.1 Establish the following gas chromatographic conditions, and allow the system to thoroughly equilibrate before use.

6.6.2 Injector parameters:

Injection technique=Split

Injector split flow=86 ml/min

Injector temperature=225 deg C

6.6.3 Oven temperature program:

Initial temperature=40 deg C

Initial time=6 min

Program rate=10 deg C/min

Upper limit temperature=175 deg C

Upper limit interval=10 min

6.6.4 Detector parameters:

Detector temperature=300 deg C

Hydrogen flow=30 ml/min

Air flow=350 ml/min

Nitrogen make up=26 ml/min

6.7 Gas chromatographic columns: SE-54 (5%-phenyl) (1%-vinyl)-methylpolysiloxane, 15 M \times 0.53 mm ID with a 1.2 micron film thickness, and a Carbowax 20M (polyethylene glycol), 15 M \times 0.53 mm ID with a 1.2 micron film thickness.

6.7.1 Column assembly: using a 0.53 mm ID butt connector union, join the 15 M \times 0.53 mm SE-54 column to the 15 M \times 0.53 mm Carbowax 20M. The SE-54 column will be inserted into the injector and the Carbowax 20M inserted into the detector after they have been joined.

6.7.2 Column parameters:

Helium flow=2.8 ml/min

Helium headpressure=2 psig

6.8 Centrifuge

6.9 Data collection system, Hewlett-Packard Model 3396, or equivalent

6.10 Pipet, 25-ml capacity, automatic dispensing, and 2 liter reservoir

6.11 Pipet, 2-ml capacity, volumetric delivery, class A

6.12 Flasks, 100 and 1000-ml capacity, volumetric, class A

6.13 Vial, serum, 50-ml capacity, red rubber septa and crimp ring seals

6.14 Sample collection basket fabricated out of wire mesh to allow for drainage

7.0 Chemicals and Reagents

CHEMICALS:

7.1 alpha-Methyl Styrene, C₉H₁₀, 99+% purity, CAS 98-83-9

7.2 n-Hexane, C₆H₁₄, 99+% purity, CAS 110-54-3

7.3 Isopropyl alcohol, C₃H₈O 99.5+% purity, reagent grade, CAS 67-63-0

7.4 Chloroform, CHCl₃, 99% min., CAS 67-66-3

REAGENTS:

7.5 Internal Standard Stock Solution: 10 mg/25 ml AMS in isopropyl alcohol.

7.5.1 Into a 25-ml beaker, weigh 0.4 g of AMS to the nearest 0.1 mg.

7.5.2 Quantitatively transfer this AMS into a 1-L volumetric flask. Dilute to the mark with isopropyl alcohol.

7.5.3 Transfer this solution to the automatic dispensing pipet reservoir. This will be labeled the AMS STOCK SOLUTION.

7.6 n-Hexane Stock Solution: 13mg/2ml hexane in isopropyl alcohol.

7.6.1 Into a 100-ml volumetric flask, weigh 0.65 g of n-hexane to the nearest 0.1 mg.

7.6.2 Dilute to the mark with isopropyl alcohol. This solution will be labeled the n-HEXANE STOCK SOLUTION.

8.0 Sample Collection, Preservation and Storage

8.1 A sampling device similar to Figure 1 is used to collect a non-vented crumb rubber sample at a location that is after the stripping operation but before the sample is exposed to the atmosphere.

8.2 The crumb rubber is allowed to cool before opening the sampling device and removing the sample.

8.3 The sampling device is opened and the crumb rubber sample is collected in the sampling basket.

8.4 One pound of crumb rubber sample is placed into a polyethylene bag. The bag is labeled with the time, date and sample location.

8.5 The sample should be delivered to the laboratory for testing within one hour of sampling.

8.6 Laboratory testing will be done within 3 hours of the sampling time.

8.7 No special storage conditions are required unless the storage time exceeds 3 hours in which case refrigeration of the samples is recommended.

9.0 Quality Control

9.1 For each sample type, 12 samples shall be obtained from the process for the recovery study. Half of the vials and caps shall be tared, labeled "spiked", and numbered 1 through 6. The other vials shall be labeled

"unspiked" and need not be tared, but are also numbered 1 through 6.

9.2 Determine the % moisture content of the crumb sample. After determining the % moisture content, the correction factor for calculating the dry crumb weight can be determined by using the equation in section 12.2 of this method.

9.3 Run the spiked and unspiked samples in the normal manner. Record the concentrations of the n-hexane content of the mixed hexane reported for each pair of spiked and unspiked samples.

9.4 For the recovery study, each sample of crumb shall be dissolved in chloroform containing a known amount of mixed hexane solvent.

9.5 For each hydrocarbon, calculate the recovery efficiency (R) using the following equations:

$$M_r = M_s - M_u$$

$$R = M_r / S$$

Where:

M_u = Measured amount of compound in the unspiked sample

M_s = Measured amount of compound in the spiked sample

M_r = Measured amount of the spiked compound

S = Amount of compound added to the spiked sample

R = Fraction of spiked compound recovered

9.6 Normally a value of R between 0.70 and 1.30 is acceptable.

9.7 R is used to correct all reported results for each compound by dividing the measured results of each compound by the R for that compound for the same sample type.

10.0 Calibration

10.1 Using the AMS STOCK SOLUTION equipped with the automatic dispensing pipet (7.5.3 of this method), transfer 25.0 ml of the internal standard solution into an uncapped 50-ml serum vial.

10.2 Using a 2.0 ml volumetric pipet, quantitatively transfer 2.0 ml of the n-HEXANE STOCK SOLUTION (7.6.2 of this method) into the 50-ml serum vial and cap. This solution will be labeled the CALIBRATION SOLUTION.

10.3 Using the conditions prescribed (6.6 of this method), inject 1 μ l of the supernate.

10.4 Obtain the peak areas and calculate the response factor as described in the calculations section (12.1 of this method).

11.0 Procedure

11.1 Determination of Dry Polymer Weight

11.1.1 Remove wet crumb from the polyethylene bag and place on paper towels to absorb excess surface moisture.

11.1.2 Cut small slices or cubes from the center of the crumb sample to improve sam-

ple uniformity and further eliminate surface moisture.

11.1.3 A suitable gravimetric measurement should be made on a sample of this wet crumb to determine the correction factor needed to calculate the dry polymer weight.

11.2 Determination of n-Hexane in Wet Crumb

11.2.1 Remove wet crumb from the polyethylene bag and place on paper towels to absorb excess surface moisture.

11.2.2 Cut small slices or cubes from the center of the crumb sample to improve sample uniformity and further eliminate surface moisture.

11.2.3 Into a tared 2 oz bottle, weigh 1.5 g of wet polymer to the nearest 0.1 mg.

11.2.4 Add 25 ml of chloroform to the 2 oz bottle and cap.

11.2.5 Using a mechanical shaker, shake the bottle until the polymer dissolves.

11.2.6 Using the autodispensing pipet, add 25.0 ml of the AMS STOCK SOLUTION (7.5.3 of this method) to the dissolved polymer solution and cap.

11.2.7 Using a mechanical shaker, shake the bottle for 10 minutes to coagulate the dissolved polymer.

11.2.8 Centrifuge the sample for 3 minutes at 2000 rpm.

11.2.9 Using the conditions prescribed (6.6 of this method), chromatograph 1 μ l of the supernate.

11.2.10 Obtain the peak areas and calculate the concentration of the component of interest as described in the calculations (12.2 of this method).

12.0 Calculations

12.1 Calibration:

$$RF_x = (W_x \times A_{is}) / (W_{is} \times A_x)$$

Where:

RF_x = the relative response factor for n-hexane

W_x = the weight (g) of n-hexane in the CALIBRATION SOLUTION

A_{is} = the area of AMS

W_{is} = the weight (g) of AMS in the CALIBRATION SOLUTION

A_x = the area of n-hexane

12.2 Procedure:

12.2.1 Correction Factor for calculating dry crumb weight.

$$F = 1 - (\% \text{ moisture} / 100)$$

Where:

F = Correction factor for calculating dry crumb weight

% moisture determined by appropriate method

12.2.2 Moisture adjustment for chromatographic determination.

$$W_s = F \times W_c$$

Where:

W_s =the weight (g) of the dry polymer corrected for moisture

F =Correction factor for calculating dry crumb weight

W_c =the weight (g) of the wet crumb in section 9.6

12.2.3 Concentration (ppm) of hexane in the wet crumb.

$$\text{ppm}_x = (A_x * RF_x * W_{is} * 10000) / (A_{is} * W_s)$$

Where:

ppm_x =parts per million of n-hexane in the polymer

A_x =the area of n-hexane

RF_x =the relative response factor for n-hexane

W_{is} =the weight (g) of AMS in the sample solution

A_{is} =the area of AMS

W_s =the weight (g) of the dry polymer corrected for moisture

13.0 Method Performance

13.1 Precision for the method was determined at the 0.08% level.

The standard deviation was 0.01 and the percent relative standard deviation (RSD) was 16.3 % with five degrees of freedom.

14.0 Waste Generation

14.1 Waste generation should be minimized where possible.

15.0 Waste Management

15.1 Discard liquid chemical waste into the chemical waste drum.

15.2 Discard polymer waste into the polymer waste container.

16.0 References

16.1 This method is based on Goodyear Chemical Division Test Method E-964.

METHOD 315—DETERMINATION OF PARTICULATE AND METHYLENE CHLORIDE EXTRACTABLE MATTER (MCEM) FROM SELECTED SOURCES AT PRIMARY ALUMINUM PRODUCTION FACILITIES

NOTE: This method does not include all of the specifications (e.g., equipment and supplies) and procedures (e.g., sampling and analytical) essential to its performance. Some material is incorporated by reference from other methods in this part. Therefore, to obtain reliable results, persons using this method should have a thorough knowledge of at least the following additional test methods: Method 1, Method 2, Method 3, and Method 5 of 40 CFR part 60, appendix A.

1.0 Scope and Application.

1.1 Analytes. Particulate matter (PM). No CAS number assigned. Methylene chloride extractable matter (MCEM). No CAS number assigned.

1.2 Applicability. This method is applicable for the simultaneous determination of PM and MCEM when specified in an applicable regulation. This method was developed by consensus with the Aluminum Association and the U.S. Environmental Protection Agency (EPA) and has limited precision estimates for MCEM; it should have similar precision to Method 5 for PM in 40 CFR part 60, appendix A since the procedures are similar for PM.

1.3 Data quality objectives. Adherence to the requirements of this method will enhance the quality of the data obtained from air pollutant sampling methods.

2.0 Summary of Method.

Particulate matter and MCEM are withdrawn isokinetically from the source. PM is collected on a glass fiber filter maintained at a temperature in the range of 120 ± 14 °C (248 ± 25 °F) or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. The PM mass, which includes any material that condenses on the probe and is subsequently removed in an acetone rinse or on the filter at or above the filtration temperature, is determined gravimetrically after removal of uncombined water. MCEM is then determined by adding a methylene chloride rinse of the probe and filter holder, extracting the condensable hydrocarbons collected in the impinger water, adding an acetone rinse followed by a methylene chloride rinse of the sampling train components after the filter and before the silica gel impinger, and determining residue gravimetrically after evaporating the solvents.

3.0 Definitions. [Reserved]

4.0 Interferences. [Reserved]

5.0 Safety.

This method may involve hazardous materials, operations, and equipment. This method does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to performing this test method.

6.0 Equipment and Supplies.

NOTE: Mention of trade names or specific products does not constitute endorsement by the EPA.

6.1 Sample collection. The following items are required for sample collection:

6.1.1 Sampling train. A schematic of the sampling train used in this method is shown in Figure 5-1, Method 5, 40 CFR part 60, appendix A. Complete construction details are given in APTD-0581 (Reference 2 in section

17.0 of this method); commercial models of this train are also available. For changes from APTD-0581 and for allowable modifications of the train shown in Figure 5-1, Method 5, 40 CFR part 60, appendix A, see the following subsections.

NOTE: The operating and maintenance procedures for the sampling train are described in APTD-0576 (Reference 3 in section 17.0 of this method). Since correct usage is important in obtaining valid results, all users should read APTD-0576 and adopt the operating and maintenance procedures outlined in it, unless otherwise specified herein. The use of grease for sealing sampling train components is not recommended because many greases are soluble in methylene chloride. The sampling train consists of the following components:

6.1.1.1 Probe nozzle. Glass or glass lined with sharp, tapered leading edge. The angle of taper shall be $\leq 30^\circ$, and the taper shall be on the outside to preserve a constant internal diameter. The probe nozzle shall be of the button-hook or elbow design, unless otherwise specified by the Administrator. Other materials of construction may be used, subject to the approval of the Administrator. A range of nozzle sizes suitable for isokinetic sampling should be available. Typical nozzle sizes range from 0.32 to 1.27 cm ($\frac{1}{8}$ to $\frac{1}{2}$ in.) inside diameter (ID) in increments of 0.16 cm ($\frac{1}{16}$ in.). Larger nozzle sizes are also available if higher volume sampling trains are used. Each nozzle shall be calibrated according to the procedures outlined in section 10.0 of this method.

6.1.1.2 Probe liner. Borosilicate or quartz glass tubing with a heating system capable of maintaining a probe gas temperature at the exit end during sampling of $120 \pm 14^\circ\text{C}$ ($248 \pm 25^\circ\text{F}$), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. Because the actual temperature at the outlet of the probe is not usually monitored during sampling, probes constructed according to APTD-0581 and using the calibration curves of APTD-0576 (or calibrated according to the procedure outlined in APTD-0576) will be considered acceptable. Either borosilicate or quartz glass probe liners may be used for stack temperatures up to about 480°C (900°F); quartz liners shall be used for temperatures between 480 and 900°C (900 and $1,650^\circ\text{F}$). Both types of liners may be used at higher temperatures than specified for short periods of time, subject to the approval of the Administrator. The softening temperature for borosilicate glass is 820°C ($1,500^\circ\text{F}$) and for quartz glass it is $1,500^\circ\text{C}$ ($2,700^\circ\text{F}$).

6.1.1.3 Pitot tube. Type S, as described in section 6.1 of Method 2, 40 CFR part 60, appendix A, or other device approved by the Administrator. The pitot tube shall be at-

tached to the probe (as shown in Figure 5-1 of Method 5, 40 CFR part 60, appendix A) to allow constant monitoring of the stack gas velocity. The impact (high pressure) opening plane of the pitot tube shall be even with or above the nozzle entry plane (see Method 2, Figure 2-6b, 40 CFR part 60, appendix A) during sampling. The Type S pitot tube assembly shall have a known coefficient, determined as outlined in section 10.0 of Method 2, 40 CFR part 60, appendix A.

6.1.1.4 Differential pressure gauge. Inclined manometer or equivalent device (two), as described in section 6.2 of Method 2, 40 CFR part 60, appendix A. One manometer shall be used for velocity head (D_p) readings, and the other, for orifice differential pressure readings.

6.1.1.5 Filter holder. Borosilicate glass, with a glass frit filter support and a silicone rubber gasket. The holder design shall provide a positive seal against leakage from the outside or around the filter. The holder shall be attached immediately at the outlet of the probe (or cyclone, if used).

6.1.1.6 Filter heating system. Any heating system capable of maintaining a temperature around the filter holder of $120 \pm 14^\circ\text{C}$ ($248 \pm 25^\circ\text{F}$) during sampling, or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. Alternatively, the tester may opt to operate the equipment at a temperature lower than that specified. A temperature gauge capable of measuring temperature to within 3°C (5.4°F) shall be installed so that the temperature around the filter holder can be regulated and monitored during sampling. Heating systems other than the one shown in APTD-0581 may be used.

6.1.1.7 Temperature sensor. A temperature sensor capable of measuring temperature to within $\pm 3^\circ\text{C}$ (5.4°F) shall be installed so that the sensing tip of the temperature sensor is in direct contact with the sample gas, and the temperature around the filter holder can be regulated and monitored during sampling.

6.1.1.8 Condenser. The following system shall be used to determine the stack gas moisture content: four glass impingers connected in series with leak-free ground glass fittings. The first, third, and fourth impingers shall be of the Greenburg-Smith design, modified by replacing the tip with a 1.3 cm ($\frac{1}{2}$ in.) ID glass tube extending to about 1.3 cm ($\frac{1}{2}$ in.) from the bottom of the flask. The second impinger shall be of the Greenburg-Smith design with the standard tip. The first and second impingers shall contain known quantities of water (section 8.3.1 of this method), the third shall be empty, and the fourth shall contain a known weight of silica gel or equivalent desiccant. A temperature sensor capable of measuring temperature to within 1°C (2°F) shall be placed

at the outlet of the fourth impinger for monitoring.

6.1.1.9 Metering system. Vacuum gauge, leak-free pump, temperature sensors capable of measuring temperature to within 3°C (5.4°F), dry gas meter (DGM) capable of measuring volume to within 2 percent, and related equipment, as shown in Figure 5-1 of Method 5, 40 CFR part 60, appendix A. Other metering systems capable of maintaining sampling rates within 10 percent of isokinetic and of determining sample volumes to within 2 percent may be used, subject to the approval of the Administrator. When the metering system is used in conjunction with a pitot tube, the system shall allow periodic checks of isokinetic rates.

6.1.1.10 Sampling trains using metering systems designed for higher flow rates than that described in APTD-0581 or APTD-0576 may be used provided that the specifications of this method are met.

6.1.2 Barometer. Mercury, aneroid, or other barometer capable of measuring atmospheric pressure to within 2.5 mm (0.1 in.) Hg.

NOTE: The barometric reading may be obtained from a nearby National Weather Service station. In this case, the station value (which is the absolute barometric pressure) shall be requested and an adjustment for elevation differences between the weather station and sampling point shall be made at a rate of minus 2.5 mm (0.1 in) Hg per 30 m (100 ft) elevation increase or plus 2.5 mm (0.1 in) Hg per 30 m (100 ft) elevation decrease.

6.1.3 Gas density determination equipment. Temperature sensor and pressure gauge, as described in sections 6.3 and 6.4 of Method 2, 40 CFR part 60, appendix A, and gas analyzer, if necessary, as described in Method 3, 40 CFR part 60, appendix A. The temperature sensor shall, preferably, be permanently attached to the pitot tube or sampling probe in a fixed configuration, such that the tip of the sensor extends beyond the leading edge of the probe sheath and does not touch any metal. Alternatively, the sensor may be attached just prior to use in the field. Note, however, that if the temperature sensor is attached in the field, the sensor must be placed in an interference-free arrangement with respect to the Type S pitot tube openings (see Method 2, Figure 2-4, 40 CFR part 60, appendix A). As a second alternative, if a difference of not more than 1 percent in the average velocity measurement is to be introduced, the temperature sensor need not be attached to the probe or pitot tube. (This alternative is subject to the approval of the Administrator.)

6.2 Sample recovery. The following items are required for sample recovery:

6.2.1 Probe-liner and probe-nozzle brushes. Nylon or Teflon® bristle brushes with stainless steel wire handles. The probe brush shall

have extensions (at least as long as the probe) constructed of stainless steel, nylon, Teflon®, or similarly inert material. The brushes shall be properly sized and shaped to brush out the probe liner and nozzle.

6.2.2 Wash bottles. Glass wash bottles are recommended. Polyethylene or tetrafluoroethylene (TFE) wash bottles may be used, but they may introduce a positive bias due to contamination from the bottle. It is recommended that acetone not be stored in polyethylene or TFE bottles for longer than a month.

6.2.3 Glass sample storage containers. Chemically resistant, borosilicate glass bottles, for acetone and methylene chloride washes and impinger water, 500 ml or 1,000 ml. Screw-cap liners shall either be rubber-backed Teflon® or shall be constructed so as to be leak-free and resistant to chemical attack by acetone or methylene chloride. (Narrow-mouth glass bottles have been found to be less prone to leakage.) Alternatively, polyethylene bottles may be used.

6.2.4 Petri dishes. For filter samples, glass, unless otherwise specified by the Administrator.

6.2.5 Graduated cylinder and/or balance. To measure condensed water, acetone wash and methylene chloride wash used during field recovery of the samples, to within 1 ml or 1 g. Graduated cylinders shall have subdivisions no greater than 2 ml. Most laboratory balances are capable of weighing to the nearest 0.5 g or less. Any such balance is suitable for use here and in section 6.3.4 of this method.

6.2.6 Plastic storage containers. Air-tight containers to store silica gel.

6.2.7 Funnel and rubber policeman. To aid in transfer of silica gel to container; not necessary if silica gel is weighed in the field.

6.2.8 Funnel. Glass or polyethylene, to aid in sample recovery.

6.3 Sample analysis. The following equipment is required for sample analysis:

6.3.1 Glass or Teflon® weighing dishes.

6.3.2 Desiccator. It is recommended that fresh desiccant be used to minimize the chance for positive bias due to absorption of organic material during drying.

6.3.3 Analytical balance. To measure to within 0.1 mg.

6.3.4 Balance. To measure to within 0.5 g.

6.3.5 Beakers. 250 ml.

6.3.6 Hygrometer. To measure the relative humidity of the laboratory environment.

6.3.7 Temperature sensor. To measure the temperature of the laboratory environment.

6.3.8 Buchner fritted funnel. 30 ml size, fine (<50 micron)-porosity fritted glass.

6.3.9 Pressure filtration apparatus.

6.3.10 Aluminum dish. Flat bottom, smooth sides, and flanged top, 18 mm deep and with an inside diameter of approximately 60 mm.

7.0 Reagents and Standards.

7.1 Sample collection. The following reagents are required for sample collection:

7.1.1 Filters. Glass fiber filters, without organic binder, exhibiting at least 99.95 percent efficiency (<0.05 percent penetration) on 0.3 micron dioctyl phthalate smoke particles. The filter efficiency test shall be conducted in accordance with ASTM Method D 2986-95A (incorporated by reference in §63.841 of this part). Test data from the supplier's quality control program are sufficient for this purpose. In sources containing SO_2 or SO_3 , the filter material must be of a type that is unreactive to SO_2 or SO_3 . Reference 10 in section 17.0 of this method may be used to select the appropriate filter.

7.1.2 Silica gel. Indicating type, 6 to 16 mesh. If previously used, dry at 175°C (350°F) for 2 hours. New silica gel may be used as received. Alternatively, other types of desiccants (equivalent or better) may be used, subject to the approval of the Administrator.

7.1.3 Water. When analysis of the material caught in the impingers is required, deionized distilled water shall be used. Run blanks prior to field use to eliminate a high blank on test samples.

7.1.4 Crushed ice.

7.1.5 Stopcock grease. Acetone-insoluble, heat-stable silicone grease. This is not necessary if screw-on connectors with Teflon sleeves, or similar, are used. Alternatively, other types of stopcock grease may be used, subject to the approval of the Administrator. [Caution: Many stopcock greases are methylene chloride-soluble. Use sparingly and carefully remove prior to recovery to prevent contamination of the MCEM analysis.]

7.2 Sample recovery. The following reagents are required for sample recovery:

7.2.1 Acetone. Acetone with blank values <1 ppm, by weight residue, is required. Acetone blanks may be run prior to field use, and only acetone with low blank values may be used. In no case shall a blank value of greater than $1\text{E-}06$ of the weight of acetone used be subtracted from the sample weight.

NOTE: This is more restrictive than Method 5, 40 CFR part 60, appendix A. At least one vendor (Supelco Incorporated located in Bellefonte, Pennsylvania) lists <1 mg/l as residue for its Environmental Analysis Solvents.

7.2.2 Methylene chloride. Methylene chloride with a blank value <1.5 ppm, by weight, residue. Methylene chloride blanks may be run prior to field use, and only methylene chloride with low blank values may be used. In no case shall a blank value of greater than $1.6\text{E-}06$ of the weight of methylene chloride used be subtracted from the sample weight.

NOTE: A least one vendor quotes <1 mg/l for Environmental Analysis Solvents-grade methylene chloride.

7.3 Sample analysis. The following reagents are required for sample analysis:

7.3.1 Acetone. Same as in section 7.2.1 of this method.

7.3.2 Desiccant. Anhydrous calcium sulfate, indicating type. Alternatively, other types of desiccants may be used, subject to the approval of the Administrator.

7.3.3 Methylene chloride. Same as in section 7.2.2 of this method.

8.0 Sample Collection, Preservation, Storage, and Transport.

NOTE: The complexity of this method is such that, in order to obtain reliable results, testers should be trained and experienced with the test procedures.

8.11 Pretest preparation. It is suggested that sampling equipment be maintained according to the procedures described in APTD-0576.

8.1.1 Weigh several 200 g to 300 g portions of silica gel in airtight containers to the nearest 0.5 g. Record on each container the total weight of the silica gel plus container. As an alternative, the silica gel need not be preweighed but may be weighed directly in its impinger or sampling holder just prior to train assembly.

8.1.2 A batch of glass fiber filters, no more than 50 at a time, should be placed in a Soxhlet extraction apparatus and extracted using methylene chloride for at least 16 hours. After extraction, check filters visually against light for irregularities, flaws, or pinhole leaks. Label the shipping containers (glass or plastic petri dishes), and keep the filters in these containers at all times except during sampling and weighing.

8.1.3 Desiccate the filters at $20 \pm 5.6^\circ\text{C}$ ($68 \pm 10^\circ\text{F}$) and ambient pressure for at least 24 hours and weigh at intervals of at least 6 hours to a constant weight, i.e., <0.5 mg change from previous weighing; record results to the nearest 0.1 mg. During each weighing the filter must not be exposed to the laboratory atmosphere for longer than 2 minutes and a relative humidity above 50 percent. Alternatively (unless otherwise specified by the Administrator), the filters may be oven-dried at 104°C (220°F) for 2 to 3 hours, desiccated for 2 hours, and weighed. Procedures other than those described, which account for relative humidity effects, may be used, subject to the approval of the Administrator.

8.2 Preliminary determinations.

8.2.1 Select the sampling site and the minimum number of sampling points according to Method 1, 40 CFR part 60, appendix A or as specified by the Administrator. Determine the stack pressure, temperature, and

the range of velocity heads using Method 2, 40 CFR part 60, appendix A; it is recommended that a leak check of the pitot lines (see section 8.1 of Method 2, 40 CFR part 60, appendix A) be performed. Determine the moisture content using Approximation Method 4 (section 1.2 of Method 4, 40 CFR part 60, appendix A) or its alternatives to make isokinetic sampling rate settings. Determine the stack gas dry molecular weight, as described in section 8.6 of Method 2, 40 CFR part 60, appendix A; if integrated Method 3 sampling is used for molecular weight determination, the integrated bag sample shall be taken simultaneously with, and for the same total length of time as, the particulate sample run.

8.2.2 Select a nozzle size based on the range of velocity heads such that it is not necessary to change the nozzle size in order to maintain isokinetic sampling rates. During the run, do not change the nozzle size. Ensure that the proper differential pressure gauge is chosen for the range of velocity heads encountered (see section 8.2 of Method 2, 40 CFR part 60, appendix A).

8.2.3 Select a suitable probe liner and probe length such that all traverse points can be sampled. For large stacks, consider sampling from opposite sides of the stack to reduce the required probe length.

8.2.4 Select a total sampling time greater than or equal to the minimum total sampling time specified in the test procedures for the specific industry such that: (1) The sampling time per point is not less than 2 minutes (or some greater time interval as specified by the Administrator); and (2) the sample volume taken (corrected to standard conditions) will exceed the required minimum total gas sample volume. The latter is based on an approximate average sampling rate.

8.2.5 The sampling time at each point shall be the same. It is recommended that the number of minutes sampled at each point be an integer or an integer plus one-half minute, in order to eliminate timekeeping errors.

8.2.6 In some circumstances (e.g., batch cycles), it may be necessary to sample for shorter times at the traverse points and to obtain smaller gas sample volumes. In these cases, the Administrator's approval must first be obtained.

8.3 Preparation of sampling train.

8.3.1 During preparation and assembly of the sampling train, keep all openings where contamination can occur covered until just prior to assembly or until sampling is about to begin. Place 100 ml of water in each of the first two impingers, leave the third impinger empty, and transfer approximately 200 to 300 g of preweighed silica gel from its container to the fourth impinger. More silica gel may be used, but care should be taken to ensure that it is not entrained and carried out from

the impinger during sampling. Place the container in a clean place for later use in the sample recovery. Alternatively, the weight of the silica gel plus impinger may be determined to the nearest 0.5 g and recorded.

8.3.2 Using a tweezer or clean disposable surgical gloves, place a labeled (identified) and weighed filter in the filter holder. Be sure that the filter is properly centered and the gasket properly placed so as to prevent the sample gas stream from circumventing the filter. Check the filter for tears after assembly is completed.

8.3.3 When glass liners are used, install the selected nozzle using a Viton A O-ring when stack temperatures are less than 260°C (500°F) and an asbestos string gasket when temperatures are higher. See APTD-0576 for details. Mark the probe with heat-resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point.

8.3.4 Set up the train as in Figure 5-1 of Method 5, 40 CFR part 60, appendix A, using (if necessary) a very light coat of silicone grease on all ground glass joints, greasing only the outer portion (see APTD-0576) to avoid possibility of contamination by the silicone grease. Subject to the approval of the Administrator, a glass cyclone may be used between the probe and filter holder when the total particulate catch is expected to exceed 100 mg or when water droplets are present in the stack gas.

8.3.5 Place crushed ice around the impingers.

8.4 Leak-check procedures.

8.4.1 Leak check of metering system shown in Figure 5-1 of Method 5, 40 CFR part 60, appendix A. That portion of the sampling train from the pump to the orifice meter should be leak-checked prior to initial use and after each shipment. Leakage after the pump will result in less volume being recorded than is actually sampled. The following procedure is suggested (see Figure 5-2 of Method 5, 40 CFR part 60, appendix A): Close the main valve on the meter box. Insert a one-hole rubber stopper with rubber tubing attached into the orifice exhaust pipe. Disconnect and vent the low side of the orifice manometer. Close off the low side orifice tap. Pressurize the system to 13 to 18 cm (5 to 7 in.) water column by blowing into the rubber tubing. Pinch off the tubing, and observe the manometer for 1 minute. A loss of pressure on the manometer indicates a leak in the meter box; leaks, if present, must be corrected.

8.4.2 Pretest leak check. A pretest leak-check is recommended but not required. If the pretest leak-check is conducted, the following procedure should be used.

8.4.2.1 After the sampling train has been assembled, turn on and set the filter and

probe heating systems to the desired operating temperatures. Allow time for the temperatures to stabilize. If a Viton A O-ring or other leak-free connection is used in assembling the probe nozzle to the probe liner, leak-check the train at the sampling site by plugging the nozzle and pulling a 380 mm (15 in.) Hg vacuum.

NOTE: A lower vacuum may be used, provided that it is not exceeded during the test.

8.4.2.2 If an asbestos string is used, do not connect the probe to the train during the leak check. Instead, leak-check the train by first plugging the inlet to the filter holder (cyclone, if applicable) and pulling a 380 mm (15 in.) Hg vacuum. (See NOTE in section 8.4.2.1 of this method). Then connect the probe to the train and perform the leak check at approximately 25 mm (1 in.) Hg vacuum; alternatively, the probe may be leak-checked with the rest of the sampling train, in one step, at 380 mm (15 in.) Hg vacuum. Leakage rates in excess of 4 percent of the average sampling rate or 0.00057 m³/min (0.02 cfm), whichever is less, are unacceptable.

8.4.2.3 The following leak check instructions for the sampling train described in APTD-0576 and APTD-0581 may be helpful. Start the pump with the bypass valve fully open and the coarse adjust valve completely closed. Partially open the coarse adjust valve and slowly close the bypass valve until the desired vacuum is reached. *Do not* reverse the direction of the bypass valve, as this will cause water to back up into the filter holder. If the desired vacuum is exceeded, either leak-check at this higher vacuum or end the leak check as shown below and start over.

8.4.2.4 When the leak check is completed, first slowly remove the plug from the inlet to the probe, filter holder, or cyclone (if applicable) and immediately turn off the vacuum pump. This prevents the water in the impingers from being forced backward into the filter holder and the silica gel from being entrained backward into the third impinger.

8.4.3 Leak checks during sample run. If, during the sampling run, a component (e.g., filter assembly or impinger) change becomes necessary, a leak check shall be conducted immediately before the change is made. The leak check shall be done according to the procedure outlined in section 8.4.2 of this method, except that it shall be done at a vacuum equal to or greater than the maximum value recorded up to that point in the test. If the leakage rate is found to be no greater than 0.00057 m³/min (0.02 cfm) or 4 percent of the average sampling rate (whichever is less), the results are acceptable, and no correction will need to be applied to the total volume of dry gas metered; if, however, a higher leakage rate is obtained, either record the leakage rate and plan to correct

the sample volume as shown in section 12.3 of this method or void the sample run.

NOTE: Immediately after component changes, leak checks are optional; if such leak checks are done, the procedure outlined in section 8.4.2 of this method should be used.

8.4.4 Post-test leak check. A leak check is mandatory at the conclusion of each sampling run. The leak check shall be performed in accordance with the procedures outlined in section 8.4.2 of this method, except that it shall be conducted at a vacuum equal to or greater than the maximum value reached during the sampling run. If the leakage rate is found to be no greater than 0.00057 m³/min (0.02 cfm) or 4 percent of the average sampling rate (whichever is less), the results are acceptable, and no correction need be applied to the total volume of dry gas metered. If, however, a higher leakage rate is obtained, either record the leakage rate and correct the sample volume, as shown in section 12.4 of this method, or void the sampling run.

8.5 Sampling train operation. During the sampling run, maintain an isokinetic sampling rate (within 10 percent of true isokinetic unless otherwise specified by the Administrator) and a temperature around the filter of 120 14°C (248 25°F), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator.

8.5.1 For each run, record the data required on a data sheet such as the one shown in Figure 5-2 of Method 5, 40 CFR part 60, appendix A. Be sure to record the initial reading. Record the DGM readings at the beginning and end of each sampling time increment, when changes in flow rates are made, before and after each leak-check, and when sampling is halted. Take other readings indicated by Figure 5-2 of Method 5, 40 CFR part 60, appendix A at least once at each sample point during each time increment and additional readings when significant changes (20 percent variation in velocity head readings) necessitate additional adjustments in flow rate. Level and zero the manometer. Because the manometer level and zero may drift due to vibrations and temperature changes, make periodic checks during the traverse.

8.5.2 Clean the portholes prior to the test run to minimize the chance of sampling deposited material. To begin sampling, remove the nozzle cap and verify that the filter and probe heating systems are up to temperature and that the pitot tube and probe are properly positioned. Position the nozzle at the first traverse point with the tip pointing directly into the gas stream. Immediately start the pump and adjust the flow to isokinetic conditions. Nomographs are available, which aid in the rapid adjustment of the isokinetic sampling rate without excessive computations. These nomographs are

designed for use when the Type S pitot tube coefficient (C_p) is 0.85 ± 0.02 and the stack gas equivalent density (dry molecular weight) is 29 ± 4 . APTD-0576 details the procedure for using the nomographs. If C_p and M_d are outside the above-stated ranges, do not use the nomographs unless appropriate steps (see Reference 7 in section 17.0 of this method) are taken to compensate for the deviations.

8.5.3 When the stack is under significant negative pressure (height of impinger stem), close the coarse adjust valve before inserting the probe into the stack to prevent water from backing into the filter holder. If necessary, the pump may be turned on with the coarse adjust valve closed.

8.5.4 When the probe is in position, block off the openings around the probe and port-hole to prevent unrepresentative dilution of the gas stream.

8.5.5 Traverse the stack cross-section, as required by Method 1, 40 CFR part 60, appendix A or as specified by the Administrator, being careful not to bump the probe nozzle into the stack walls when sampling near the walls or when removing or inserting the probe through the portholes; this minimizes the chance of extracting deposited material.

8.5.6 During the test run, make periodic adjustments to keep the temperature around the filter holder at the proper level; add more ice and, if necessary, salt to maintain a temperature of less than 20°C (68°F) at the condenser/silica gel outlet. Also, periodically check the level and zero of the manometer.

8.5.7 If the pressure drop across the filter becomes too high, making isokinetic sampling difficult to maintain, the filter may be replaced in the midst of the sample run. It is recommended that another complete filter assembly be used rather than attempting to change the filter itself. Before a new filter assembly is installed, conduct a leak check (see section 8.4.3 of this method). The total PM weight shall include the summation of the filter assembly catches.

8.5.8 A single train shall be used for the entire sample run, except in cases where simultaneous sampling is required in two or more separate ducts or at two or more different locations within the same duct, or in cases where equipment failure necessitates a change of trains. In all other situations, the use of two or more trains will be subject to the approval of the Administrator.

NOTE: When two or more trains are used, separate analyses of the front-half and (if applicable) impinger catches from each train shall be performed, unless identical nozzle sizes were used in all trains, in which case the front-half catches from the individual trains may be combined (as may the impinger catches) and one analysis of the front-half catch and one analysis of the impinger catch may be performed.

8.5.9 At the end of the sample run, turn off the coarse adjust valve, remove the probe and nozzle from the stack, turn off the pump, record the final DGM reading, and then conduct a post-test leak check, as outlined in section 8.4.4 of this method. Also leak-check the pitot lines as described in section 8.1 of Method 2, 40 CFR part 60, appendix A. The lines must pass this leak check in order to validate the velocity head data.

8.6 Calculation of percent isokinetic. Calculate percent isokinetic (see Calculations, section 12.12 of this method) to determine whether a run was valid or another test run should be made. If there was difficulty in maintaining isokinetic rates because of source conditions, consult the Administrator for possible variance on the isokinetic rates.

8.7 Sample recovery.

8.7.1 Proper cleanup procedure begins as soon as the probe is removed from the stack at the end of the sampling period. Allow the probe to cool.

8.7.2 When the probe can be safely handled, wipe off all external PM near the tip of the probe nozzle and place a cap over it to prevent losing or gaining PM. Do not cap off the probe tip tightly while the sampling train is cooling down. This would create a vacuum in the filter holder, thus drawing water from the impingers into the filter holder.

8.7.3 Before moving the sample train to the cleanup site, remove the probe from the sample train, wipe off the silicone grease, and cap the open outlet of the probe. Be careful not to lose any condensate that might be present. Wipe off the silicone grease from the filter inlet where the probe was fastened and cap it. Remove the umbilical cord from the last impinger and cap the impinger. If a flexible line is used between the first impinger or condenser and the filter holder, disconnect the line at the filter holder and let any condensed water or liquid drain into the impingers or condenser. After wiping off the silicone grease, cap off the filter holder outlet and impinger inlet. Ground-glass stoppers, plastic caps, or serum caps may be used to close these openings.

8.7.4 Transfer the probe and filter-impinger assembly to the cleanup area. This area should be clean and protected from the wind so that the chances of contaminating or losing the sample will be minimized.

8.7.5 Save a portion of the acetone and methylene chloride used for cleanup as blanks. Take 200 ml of each solvent directly from the wash bottle being used and place it in glass sample containers labeled "acetone blank" and "methylene chloride blank," respectively.

8.7.6 Inspect the train prior to and during disassembly and note any abnormal conditions. Treat the samples as follows:

8.7.6.1 Container No. 1. Carefully remove the filter from the filter holder, and place it

in its identified petri dish container. Use a pair of tweezers and/or clean disposable surgical gloves to handle the filter. If it is necessary to fold the filter, do so such that the PM cake is inside the fold. Using a dry nylon bristle brush and/or a sharp-edged blade, carefully transfer to the petri dish any PM and/or filter fibers that adhere to the filter holder gasket. Seal the container.

8.7.6.2 Container No. 2. Taking care to see that dust on the outside of the probe or other exterior surfaces does not get into the sample, quantitatively recover PM or any condensate from the probe nozzle, probe fitting, probe liner, and front half of the filter holder by washing these components with acetone and placing the wash in a glass container. Perform the acetone rinse as follows:

8.7.6.2.1 Carefully remove the probe nozzle and clean the inside surface by rinsing with acetone from a wash bottle and brushing with a nylon bristle brush. Brush until the acetone rinse shows no visible particles, after which make a final rinse of the inside surface with acetone.

8.7.6.2.2 Brush and rinse the inside parts of the Swagelok fitting with acetone in a similar way until no visible particles remain.

8.7.6.2.3 Rinse the probe liner with acetone by tilting and rotating the probe while squirting acetone into its upper end so that all inside surfaces are wetted with acetone. Let the acetone drain from the lower end into the sample container. A funnel (glass or polyethylene) may be used to aid in transferring liquid washes to the container. Follow the acetone rinse with a probe brush. Hold the probe in an inclined position, squirt acetone into the upper end as the probe brush is being pushed with a twisting action through the probe, hold a sample container under the lower end of the probe, and catch any acetone and PM that is brushed from the probe. Run the brush through the probe three times or more until no visible PM is carried out with the acetone or until none remains in the probe liner on visual inspection. With stainless steel or other metal probes, run the brush through in the above-described manner at least six times, since metal probes have small crevices in which PM can be entrapped. Rinse the brush with acetone and quantitatively collect these washings in the sample container. After the brushing, make a final acetone rinse of the probe as described above.

8.7.6.2.4 It is recommended that two people clean the probe to minimize sample losses. Between sampling runs, keep brushes clean and protected from contamination.

8.7.6.2.5 After ensuring that all joints have been wiped clean of silicone grease, clean the inside of the front half of the filter holder by rubbing the surfaces with a nylon bristle brush and rinsing with acetone. Rinse each surface three times or more if needed to

remove visible particulate. Make a final rinse of the brush and filter holder. Carefully rinse out the glass cyclone also (if applicable).

8.7.6.2.6 After rinsing the nozzle, probe, and front half of the filter holder with acetone, repeat the entire procedure with methylene chloride and save in a separate No. 2M container.

8.7.6.2.7 After acetone and methylene chloride washings and PM have been collected in the proper sample containers, tighten the lid on the sample containers so that acetone and methylene chloride will not leak out when it is shipped to the laboratory. Mark the height of the fluid level to determine whether leakage occurs during transport. Label each container to identify clearly its contents.

8.7.6.3 Container No. 3. Note the color of the indicating silica gel to determine whether it has been completely spent, and make a notation of its condition. Transfer the silica gel from the fourth impinger to its original container and seal the container. A funnel may make it easier to pour the silica gel without spilling. A rubber policeman may be used as an aid in removing the silica gel from the impinger. It is not necessary to remove the small amount of dust particles that may adhere to the impinger wall and are difficult to remove. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel. If a balance is available in the field, follow the procedure for Container No. 3 in section 11.2.3 of this method.

8.7.6.4 Impinger water. Treat the impingers as follows:

8.7.6.4.1 Make a notation of any color or film in the liquid catch. Measure the liquid that is in the first three impingers to within 1 ml by using a graduated cylinder or by weighing it to within 0.5 g by using a balance (if one is available). Record the volume or weight of liquid present. This information is required to calculate the moisture content of the effluent gas.

8.7.6.4.2 Following the determination of the volume of liquid present, rinse the back half of the train with water, add it to the impinger catch, and store it in a container labeled 3W (water).

8.7.6.4.3 Following the water rinse, rinse the back half of the train with acetone to remove the excess water to enhance subsequent organic recovery with methylene chloride and quantitatively recover to a container labeled 3S (solvent) followed by at least three sequential rinsings with aliquots of methylene chloride. Quantitatively recover to the same container labeled 3S. Record separately the amount of both acetone and methylene chloride used to the nearest 1 ml or 0.5g.

NOTE: Because the subsequent analytical finish is gravimetric, it is okay to recover both solvents to the same container. This would not be recommended if other analytical finishes were required.

8.8 Sample transport. Whenever possible, containers should be shipped in such a way that they remain upright at all times.

9.0 Quality Control.

9.1 Miscellaneous quality control measures.

Section	Quality control measure	Effect
8.4, 10.1–10.6.	Sampling and equipment leak check and calibration.	Ensure accurate measurement of stack gas flow rate, sample volume.

9.2 Volume metering system checks. The following quality control procedures are suggested to check the volume metering system calibration values at the field test site prior to sample collection. These procedures are optional.

9.2.1 Meter orifice check. Using the calibration data obtained during the calibration procedure described in section 10.3 of this method, determine the ΔH_a for the metering system orifice. The ΔH_a is the orifice pressure differential in units of in. H₂O that correlates to 0.75 cfm of air at 528°R and 29.92 in. Hg. The ΔH_a is calculated as follows:

$$\Delta H_a = 0.0319 \Delta H \frac{T_m \Theta^2}{P_{\text{bar}} Y^2 V_m^2}$$

Where

0.0319 = (0.0567 in. Hg/°R)(0.75 cfm)²;

ΔH = Average pressure differential across the orifice meter, in. H₂O;

T_m = Absolute average DGM temperature, °R;

Θ = Total sampling time, min;

P_{bar} = Barometric pressure, in. Hg;

Y = DGM calibration factor, dimensionless;

V_m = Volume of gas sample as measured by DGM, dcf.

9.2.1.1 Before beginning the field test (a set of three runs usually constitutes a field test), operate the metering system (i.e., pump, volume meter, and orifice) at the ΔH_a pressure differential for 10 minutes. Record the volume collected, the DGM temperature, and the barometric pressure. Calculate a DGM calibration check value, Y_c , as follows:

$$Y_c = \frac{10}{V_m} \left[\frac{0.0319 T_m}{P_{\text{bar}}} \right]^{\frac{1}{2}}$$

Where

Y_c = DGM calibration check value, dimensionless;

10 = Run time, min.

9.2.1.2 Compare the Y_c value with the dry gas meter calibration factor Y to determine that: $0.97 Y < Y_c < 1.03 Y$. If the Y_c value is not within this range, the volume metering system should be investigated before beginning the test.

9.2.2 Calibrated critical orifice. A calibrated critical orifice, calibrated against a wet test meter or spirometer and designed to be inserted at the inlet of the sampling meter box, may be used as a quality control check by following the procedure of section 16.2 of this method.

10.0 Calibration and Standardization.

NOTE: Maintain a laboratory log of all calibrations.

10.1 Probe nozzle. Probe nozzles shall be calibrated before their initial use in the field. Using a micrometer, measure the ID of the nozzle to the nearest 0.025 mm (0.001 in.). Make three separate measurements using different diameters each time, and obtain the average of the measurements. The difference between the high and low numbers shall not exceed 0.1 mm (0.004 in.). When nozzles become nicked, dented, or corroded, they shall be reshaped, sharpened, and recalibrated before use. Each nozzle shall be permanently and uniquely identified.

10.2 Pitot tube assembly. The Type S pitot tube assembly shall be calibrated according to the procedure outlined in section 10.1 of Method 2, 40 CFR part 60, appendix A.

10.3 Metering system.

10.3.1 Calibration prior to use. Before its initial use in the field, the metering system shall be calibrated as follows: Connect the metering system inlet to the outlet of a wet test meter that is accurate to within 1 percent. Refer to Figure 5-5 of Method 5, 40 CFR part 60, appendix A. The wet test meter should have a capacity of 30 liters/revolution (1 ft³/rev). A spirometer of 400 liters (14 ft³) or more capacity, or equivalent, may be used for this calibration, although a wet test meter is usually more practical. The wet test meter should be periodically calibrated with a spirometer or a liquid displacement meter to ensure the accuracy of the wet test meter. Spirometers or wet test meters of other sizes may be used, provided that the specified accuracies of the procedure are maintained. Run the metering system pump for about 15 minutes with the orifice manometer indicating a median reading, as expected in field use, to allow the pump to warm up and to permit the interior surface of the wet test meter to be thoroughly wetted. Then, at each of a minimum of three orifice manometer settings, pass an exact quantity of gas through the wet test meter and note the gas volume indicated by the DGM. Also note the barometric pressure and the temperatures of

the wet test meter, the inlet of the DGM, and the outlet of the DGM. Select the highest and lowest orifice settings to bracket the expected field operating range of the orifice. Use a minimum volume of 0.15 m³ (5 cf) at all orifice settings. Record all the data on a form similar to Figure 5-6 of Method 5, 40 CFR part 60, appendix A, and calculate Y (the DGM calibration factor) and ΔH_a (the orifice calibration factor) at each orifice setting, as shown on Figure 5-6 of Method 5, 40 CFR part 60, appendix A. Allowable tolerances for individual Y and ΔH_a values are given in Figure 5-6 of Method 5, 40 CFR part 60, appendix A. Use the average of the Y values in the calculations in section 12 of this method.

10.3.1.1 Before calibrating the metering system, it is suggested that a leak check be conducted. For metering systems having diaphragm pumps, the normal leak check procedure will not detect leakages within the pump. For these cases the following leak check procedure is suggested: make a 10-minute calibration run at 0.00057 m³/min (0.02 cfm); at the end of the run, take the difference of the measured wet test meter and DGM volumes; divide the difference by 10 to get the leak rate. The leak rate should not exceed 0.00057 m³/min (0.02 cfm).

10.3.2 Calibration after use. After each field use, the calibration of the metering system shall be checked by performing three calibration runs at a single, intermediate orifice setting (based on the previous field test) with the vacuum set at the maximum value reached during the test series. To adjust the vacuum, insert a valve between the wet test meter and the inlet of the metering system. Calculate the average value of the DGM calibration factor. If the value has changed by more than 5 percent, recalibrate the meter over the full range of orifice settings, as previously detailed.

NOTE: Alternative procedures, e.g., re-checking the orifice meter coefficient, may be used, subject to the approval of the Administrator.

10.3.3 Acceptable variation in calibration. If the DGM coefficient values obtained before and after a test series differ by more than 5 percent, either the test series shall be voided or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before or after) gives the lower value of total sample volume.

10.4 Probe heater calibration. Use a heat source to generate air heated to selected temperatures that approximate those expected to occur in the sources to be sampled. Pass this air through the probe at a typical sample flow rate while measuring the probe inlet and outlet temperatures at various probe heater settings. For each air temperature generated, construct a graph of probe heating system setting versus probe outlet

temperature. The procedure outlined in APTD-0576 can also be used. Probes constructed according to APTD-0581 need not be calibrated if the calibration curves in APTD-0576 are used. Also, probes with outlet temperature monitoring capabilities do not require calibration.

NOTE: The probe heating system shall be calibrated before its initial use in the field.

10.5 Temperature sensors. Use the procedure in section 10.3 of Method 2, 40 CFR part 60, appendix A to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers.

10.6 Barometer. Calibrate against a mercury barometer.

11.0 Analytical Procedure.

11.1 Record the data required on a sheet such as the one shown in Figure 315-1 of this method.

11.2 Handle each sample container as follows:

11.2.1 Container No. 1.

11.2.1.1 PM analysis. Leave the contents in the shipping container or transfer the filter and any loose PM from the sample container to a tared glass weighing dish. Desiccate for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh to a constant weight and report the results to the nearest 0.1 mg. For purposes of this section, the term "constant weight" means a difference of no more than 0.5 mg or 1 percent of total weight less tare weight, whichever is greater, between two consecutive weighings, with no less than 6 hours of desiccation time between weighings (overnight desiccation is a common practice). If a third weighing is required and it agrees within ± 0.5 mg, then the results of the second weighing should be used. For quality assurance purposes, record and report each individual weighing; if more than three weighings are required, note this in the results for the subsequent MCEM results.

11.2.1.2 MCEM analysis. Transfer the filter and contents quantitatively into a beaker. Add 100 ml of methylene chloride and cover with aluminum foil. Sonicate for 3 minutes then allow to stand for 20 minutes. Set up the filtration apparatus. Decant the solution into a clean Buchner fritted funnel. Immediately pressure filter the solution through the tube into another clean, dry beaker. Continue decanting and pressure filtration until all the solvent is transferred. Rinse the beaker and filter with 10 to 20 ml methylene chloride, decant into the Buchner fritted funnel and pressure filter. Place the beaker on a low-temperature hot plate (maximum 40°C) and slowly evaporate almost to

dryness. Transfer the remaining last few milliliters of solution quantitatively from the beaker (using at least three aliquots of methylene chloride rinse) to a tared clean dry aluminum dish and evaporate to complete dryness. Remove from heat once solvent is evaporated. Reweigh the dish after a 30-minute equilibrium in the balance room and determine the weight to the nearest 0.1 mg. Conduct a methylene chloride blank run in an identical fashion.

11.2.2 Container No. 2.

11.2.2.1 PM analysis. Note the level of liquid in the container, and confirm on the analysis sheet whether leakage occurred during transport. If a noticeable amount of leakage has occurred, either void the sample or use methods, subject to the approval of the Administrator, to correct the final results. Measure the liquid in this container either volumetrically to ± 1 ml or gravimetrically to ± 0.5 g. Transfer the contents to a tared 250 ml beaker and evaporate to dryness at ambient temperature and pressure. Desiccate for 24 hours, and weigh to a constant weight. Report the results to the nearest 0.1 mg.

11.2.2.2 MCEM analysis. Add 25 ml methylene chloride to the beaker and cover with aluminum foil. Sonicate for 3 minutes then allow to stand for 20 minutes; combine with contents of Container No. 2M and pressure filter and evaporate as described for Container 1 in section 11.2.1.2 of this method.

Notes for MCEM Analysis

1. Light finger pressure only is necessary on 24/40 adaptor. A Chemplast adaptor #15055-240 has been found satisfactory.

2. Avoid aluminum dishes made with fluted sides, as these may promote solvent "creep," resulting in possible sample loss.

3. If multiple samples are being run, rinse the Buchner fritted funnel twice between samples with 5 ml solvent using pressure filtration. After the second rinse, continue the flow of air until the glass frit is completely dry. Clean the Buchner fritted funnels thoroughly after filtering five or six samples.

11.2.3 Container No. 3. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g using a balance. This step may be conducted in the field.

11.2.4 Container 3W (impinger water).

11.2.4.1 MCEM analysis. Transfer the solution into a 1,000 ml separatory funnel quantitatively with methylene chloride washes. Add enough solvent to total approximately 50 ml, if necessary. Shake the funnel for 1 minute, allow the phases to separate, and drain the solvent layer into a 250 ml beaker. Repeat the extraction twice. Evaporate with low heat (less than 40°C) until near dryness. Transfer the remaining few milliliters of solvent quantitatively with small solvent washes into a clean, dry, tared aluminum dish

and evaporate to dryness. Remove from heat once solvent is evaporated. Reweigh the dish after a 30-minute equilibration in the balance room and determine the weight to the nearest 0.1 mg.

11.2.5 Container 3S (solvent).

11.2.5.1 MCEM analysis. Transfer the mixed solvent to 250 ml beaker(s). Evaporate and weigh following the procedures detailed for container 3W in section 11.2.4 of this method.

11.2.6 Blank containers. Measure the distilled water, acetone, or methylene chloride in each container either volumetrically or gravimetrically. Transfer the "solvent" to a tared 250 ml beaker, and evaporate to dryness at ambient temperature and pressure. (Conduct a solvent blank on the distilled deionized water blank in an identical fashion to that described in section 11.2.4.1 of this method.) Desiccate for 24 hours, and weigh to a constant weight. Report the results to the nearest 0.1 mg.

NOTE: The contents of Containers No. 2, 3W, and 3M as well as the blank containers may be evaporated at temperatures higher than ambient. If evaporation is done at an elevated temperature, the temperature must be below the boiling point of the solvent; also, to prevent "bumping," the evaporation process must be closely supervised, and the contents of the beaker must be swirled occasionally to maintain an even temperature. Use extreme care, as acetone and methylene chloride are highly flammable and have a low flash point.

12.0 Data Analysis and Calculations.

12.1 Carry out calculations, retaining at least one extra decimal figure beyond that of the acquired data. Round off figures after the final calculation. Other forms of the equations may be used as long as they give equivalent results.

12.2 Nomenclature.

A_n = Cross-sectional area of nozzle, m^3 (ft^3).

B_{ws} = Water vapor in the gas stream, proportion by volume.

C_a = Acetone blank residue concentration, mg/g.

C_s = Concentration of particulate matter in stack gas, dry basis, corrected to standard conditions, g/dscm ($g/dscf$).

I = Percent of isokinetic sampling.

L_a = Maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change; equal to 0.00057 m^3/min (0.02 cfm) or 4 percent of the average sampling rate, whichever is less.

L_i = Individual leakage rate observed during the leak check conducted prior to the "ith" component change ($i = 1, 2, 3 \dots n$), m^3/min (cfm).

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L_p = Leakage rate observed during the post-test leak check, m³/min (cfm).
 m_a = Mass of residue of acetone after evaporation, mg.
 m_n = Total amount of particulate matter collected, mg.
 M_w = Molecular weight of water, 18.0 g/g-mole (18.0 lb/lb-mole).
 P_{bar} = Barometric pressure at the sampling site, mm Hg (in. Hg).
 P_s = Absolute stack gas pressure, mm Hg (in. Hg).
 P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in. Hg).
 R = Ideal gas constant, 0.06236 [(mm Hg)(m³)/[(°K) (g-mole)] '61'21.85 [(in. Hg)(ft³)/[(°R)(lb-mole)'61'].
 T_m = Absolute average dry gas meter (DGM) temperature (see Figure 5-2 of Method 5, 40 CFR part 60, appendix A), °K (°R).
 T_s = Absolute average stack gas temperature (see Figure 5-2 of Method 5, 40 CFR part 60, appendix A), °K (°R).
 T_{std} = Standard absolute temperature, 293°K (528°R).
 V_a = Volume of acetone blank, ml.
 V_{aw} = Volume of acetone used in wash, ml.
 V_t = Volume of methylene chloride blank, ml.
 V_{tw} = Volume of methylene chloride used in wash, ml.
 V_{lc} = Total volume liquid collected in impingers and silica gel (see Figure 5-3 of Method 5, 40 CFR part 60, appendix A), ml.
 V_m = Volume of gas sample as measured by dry gas meter, dcm (dcf).
 $V_{m(std)}$ = Volume of gas sample measured by the dry gas meter, corrected to standard conditions, dscm (dscf).
 $V_{w(std)}$ = Volume of water vapor in the gas sample, corrected to standard conditions, scm (scf).

V_s = Stack gas velocity, calculated by Equation 2-9 in Method 2, 40 CFR part 60, appendix A, using data obtained from Method 5, 40 CFR part 60, appendix A, m/sec (ft/sec).
 W_a = Weight of residue in acetone wash, mg.
 Y = Dry gas meter calibration factor.
 ΔH = Average pressure differential across the orifice meter (see Figure 5-2 of Method 5, 40 CFR part 60, appendix A), mm H₂O (in H₂O).
 ρ_a = Density of acetone, 785.1 mg/ml (or see label on bottle).
 ρ_w = Density of water, 0.9982 g/ml (0.002201 lb/ml).
 ρ_t = Density of methylene chloride, 1316.8 mg/ml (or see label on bottle).
 Θ = Total sampling time, min.
 Θ_1 = Sampling time interval, from the beginning of a run until the first component change, min.
 Θ_i = Sampling time interval, between two successive component changes, beginning with the interval between the first and second changes, min.
 Θ_p = Sampling time interval, from the final (nth) component change until the end of the sampling run, min.
 13.6 = Specific gravity of mercury.
 60 = Sec/min.
 100 = Conversion to percent.

12.3 Average dry gas meter temperature and average orifice pressure drop. See data sheet (Figure 5-2 of Method 5, 40 CFR part 60, appendix A).

12.4 Dry gas volume. Correct the sample volume measured by the dry gas meter to standard conditions (20°C, 760 mm Hg or 68°F, 29.92 in Hg) by using Equation 315-1.

$$V = V_m Y \frac{T_{std} \left(P_{bar} + \frac{\Delta H}{13.6} \right)}{T_m P_{std}} = V = K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m} \quad \text{Eq. 315-1}$$

Where

K_1 = 0.3858 °K/mm Hg for metric units,
 = 17.64 °R/in Hg for English units.

NOTE: Equation 315-1 can be used as written unless the leakage rate observed during any of the mandatory leak checks (i.e., the post-test leak check or leak checks conducted prior to component changes) exceeds L_a . If L_p or L_i exceeds L_a , Equation 315-1 must be modified as follows:

(a) Case I. No component changes made during sampling run. In this case, replace V_m in Equation 315-1 with the expression:

$$[V_m - (L_p - L_a) \Theta]$$

(b) Case II. One or more component changes made during the sampling run. In this case, replace V_m in Equation 315-1 by the expression:

$$\left[V_m - (L_1 - L_a) \Theta_1 - \sum_{i=2}^n (L_i - L_a) \Theta_i - (L_p - L_a) \Theta_p \right]$$

and substitute only for those leakage rates (L_i or L_p) which exceed L_a .

12.5 Volume of water vapor condensed.

$$V_{w(\text{std})} = V_{lc} \frac{\rho_w R T_{\text{std}}}{M_w P_{\text{std}}} = K_2 V_{lc} \quad \text{Eq. 315-2}$$

Where

$K_2 = 0.001333 \text{ m}^3/\text{ml}$ for metric units;
 $= 0.04706 \text{ ft}^3/\text{ml}$ for English units.

12.6 Moisture content.

$$B_{ws} = \frac{V_{w(\text{std})}}{V_{m(\text{std})} + V_{w(\text{std})}} \quad \text{Eq. 315-3}$$

NOTE: In saturated or water droplet-laden gas streams, two calculations of the moisture content of the stack gas shall be made, one from the impinger analysis (Equation 315-3), and a second from the assumption of saturated conditions. The lower of the two values of B_{ws} shall be considered correct. The procedure for determining the moisture content based upon assumption of saturated conditions is given in section 4.0 of Method 4, 40 CFR part 60, appendix A. For the purposes of this method, the average stack gas temperature from Figure 5-2 of Method 5, 40 CFR part 60, appendix A may be used to make this determination, provided that the accuracy of the in-stack temperature sensor is $\pm 1^\circ\text{C}$ (2°F).

12.7 Acetone blank concentration.

$$C_a = \frac{M_a}{V_a \rho_a} \quad \text{Eq. 315-4}$$

12.8 Acetone wash blank.

$W_a = C_a V_{aw} \rho_a$ Eq. 315-5

12.9 Total particulate weight. Determine the total PM catch from the sum of the weights obtained from Containers 1 and 2 less the acetone blank associated with these two containers (see Figure 315-1).

NOTE: Refer to section 8.5.8 of this method to assist in calculation of results involving two or more filter assemblies or two or more sampling trains.

12.10 Particulate concentration.

$C_s = K_3 m_n / V_{m(\text{std})}$ Eq. 315-6

where

$K = 0.001 \text{ g/mg}$ for metric units;
 $= 0.0154 \text{ gr/mg}$ for English units.

12.11 Conversion factors.

From	To	Multiply by
ft ³	m ³	0.02832
gr	mg	64.80004
gr/ft ³	mg/m ³	2288.4
mg	g	0.001
gr	lb	1.429×10^{-4}

12.12 Isokinetic variation.

12.12.1 Calculation from raw data.

$$I = \frac{100 T_s \left[K_4 V_{lc} + \left(\frac{V_m Y}{T_m} \right) \left(P_{\text{bar}} + \frac{\Delta H}{13.6} \right) \right]}{60 \Theta V_s P_s A_n} \quad \text{Eq. 315-7}$$

where

$K_4 = 0.003454 \text{ [(mm Hg)(m}^3\text{)]/[(m1)(}^\circ\text{K)]}$ for metric units;

$= 0.002669 \text{ [(in Hg)(ft}^3\text{)]/[(m1)(}^\circ\text{R)]}$ for English units.

12.12.2 Calculation from intermediate values.

$$I = \frac{T_s V_{m(std)} P_{std} 100}{T_{std} V_s \Theta A_n P_s 60(1 - B_{ws})} = K_5 \frac{T_s V_{m(std)}}{P_s V_s A_n \Theta(1 - B_{ws})} \quad \text{Eq. 315-8}$$

where

$K_5 = 4.320$ for metric units;
 $= 0.09450$ for English units.

12.12.3 Acceptable results. If 90 percent $\leq I \leq 110$ percent, the results are acceptable. If the PM or MCEM results are low in comparison to the standard, and "I" is over 110 percent or less than 90 percent, the Administrator may opt to accept the results. Reference 4 in the Bibliography may be used to make acceptability judgments. If "I" is judged to be unacceptable, reject the results, and repeat the test.

12.13 Stack gas velocity and volumetric flow rate. Calculate the average stack gas velocity and volumetric flow rate, if needed, using data obtained in this method and the equations in sections 5.2 and 5.3 of Method 2, 40 CFR part 60, appendix A.

12.14 MCEM results. Determine the MCEM concentration from the results from Containers 1, 2, 2M, 3W, and 3S less the acetone, methylene chloride, and filter blanks value as determined in the following equation:

$$m_{mcecm} = Sm_{total} - w_a - w_t - f_b$$

13.0 Method Performance. [Reserved]

14.0 Pollution Prevention. [Reserved]

15.0 Waste Management. [Reserved]

16.0 Alternative Procedures.

16.1 Dry gas meter as a calibration standard. A DGM may be used as a calibration standard for volume measurements in place of the wet test meter specified in section 16.1 of this method, provided that it is calibrated initially and recalibrated periodically as follows:

16.1.1 Standard dry gas meter calibration.

16.1.1.1. The DGM to be calibrated and used as a secondary reference meter should be of high quality and have an appropriately sized

capacity, e.g., 3 liters/rev (0.1 ft³/rev). A spirometer (400 liters or more capacity), or equivalent, may be used for this calibration, although a wet test meter is usually more practical. The wet test meter should have a capacity of 30 liters/rev (1 ft³/rev) and be capable of measuring volume to within 1.0 percent; wet test meters should be checked against a spirometer or a liquid displacement meter to ensure the accuracy of the wet test meter. Spirometers or wet test meters of other sizes may be used, provided that the specified accuracies of the procedure are maintained.

16.1.1.2 Set up the components as shown in Figure 5-7 of Method 5, 40 CFR part 60, appendix A. A spirometer, or equivalent, may be used in place of the wet test meter in the system. Run the pump for at least 5 minutes at a flow rate of about 10 liters/min (0.35 cfm) to condition the interior surface of the wet test meter. The pressure drop indicated by the manometer at the inlet side of the DGM should be minimized (no greater than 100 mm H₂O [4 in. H₂O] at a flow rate of 30 liters/min [1 cfm]). This can be accomplished by using large-diameter tubing connections and straight pipe fittings.

16.1.1.3 Collect the data as shown in the example data sheet (see Figure 5-8 of Method 5, 40 CFR part 60, appendix A). Make triplicate runs at each of the flow rates and at no less than five different flow rates. The range of flow rates should be between 10 and 34 liters/min (0.35 and 1.2 cfm) or over the expected operating range.

16.1.1.4 Calculate flow rate, Q, for each run using the wet test meter volume, V_w, and the run time, q. Calculate the DGM coefficient, Y_{ds}, for each run. These calculations are as follows:

$$Q = K_1 \frac{P_{bar} V_w}{(t_w + t_{std}) \Theta} \quad \text{Eq. 315-9}$$

$$Y_{ds} = \frac{V_w (T_{ds} + T_{std}) P_{bar}}{V_{ds} (T_w + T_{std}) \left(P_{bar} + \frac{\Delta p}{13.6} \right)} \quad \text{Eq. 315-10}$$

Where

$K_1 = 0.3858$ for international system of units (SI); 17.64 for English units;

P_{bar} = Barometric pressure, mm Hg (in Hg);

V_w = Wet test meter volume, liter (ft³);

t_w = Average wet test meter temperature, °C (°F);

t_{std} = 273°C for SI units; 460°F for English units;

Θ = Run time, min;

t_{ds} = Average dry gas meter temperature, °C (°F);

V_{ds} = Dry gas meter volume, liter (ft³);

Δp = Dry gas meter inlet differential pressure, mm H₂O (in H₂O).

16.1.1.5 Compare the three Y_{ds} values at each of the flow rates and determine the maximum and minimum values. The difference between the maximum and minimum values at each flow rate should be no greater than 0.030. Extra sets of triplicate runs may be made in order to complete this requirement. In addition, the meter coefficients should be between 0.95 and 1.05. If these specifications cannot be met in three sets of successive triplicate runs, the meter is not suitable as a calibration standard and should not be used as such. If these specifications are met, average the three Y_{ds} values at each flow rate resulting in five average meter coefficients, Y_{ds} .

16.1.1.6 Prepare a curve of meter coefficient, Y_{ds} , versus flow rate, Q , for the DGM. This curve shall be used as a reference when the meter is used to calibrate other DGMs and to determine whether recalibration is required.

16.1.2 Standard dry gas meter recalibration.

16.1.2.1 Recalibrate the standard DGM against a wet test meter or spirometer annually or after every 200 hours of operation, whichever comes first. This requirement is valid provided the standard DGM is kept in a laboratory and, if transported, cared for as any other laboratory instrument. Abuse to the standard meter may cause a change in the calibration and will require more frequent recalibrations.

16.1.2.2 As an alternative to full recalibration, a two-point calibration check may be made. Follow the same procedure and equipment arrangement as for a full recalibration, but run the meter at only two flow rates (suggested rates are 14 and 28 liters/min [0.5 and 1.0 cfm]). Calculate the meter coefficients for these two points, and compare the values with the meter calibration curve. If the two coefficients are within 1.5 percent of the calibration curve values at the same flow rates, the meter need not be recalibrated until the next date for a recalibration check.

6.2 Critical orifices as calibration standards. Critical orifices may be used as calibration standards in place of the wet test meter specified in section 10.3 of this method, provided that they are selected, calibrated, and used as follows:

16.2.1 Selection of critical orifices.

16.2.1.1 The procedure that follows describes the use of hypodermic needles or stainless steel needle tubing that has been found suitable for use as critical orifices. Other materials and critical orifice designs

may be used provided the orifices act as true critical orifices; i.e., a critical vacuum can be obtained, as described in section 7.2.2.2.3 of Method 5, 40 CFR part 60, appendix A. Select five critical orifices that are appropriately sized to cover the range of flow rates between 10 and 34 liters/min or the expected operating range. Two of the critical orifices should bracket the expected operating range. A minimum of three critical orifices will be needed to calibrate a Method 5 DGM; the other two critical orifices can serve as spares and provide better selection for bracketing the range of operating flow rates. The needle sizes and tubing lengths shown in Table 315-1 give the approximate flow rates indicated in the table.

16.2.1.2 These needles can be adapted to a Method 5 type sampling train as follows: Insert a serum bottle stopper, 13 x 20 mm sleeve type, into a 0.5 in Swagelok quick connect. Insert the needle into the stopper as shown in Figure 5-9 of Method 5, 40 CFR part 60, appendix A.

16.2.2 Critical orifice calibration. The procedure described in this section uses the Method 5 meter box configuration with a DGM as described in section 6.1.1.9 of this method to calibrate the critical orifices. Other schemes may be used, subject to the approval of the Administrator.

16.2.2.1 Calibration of meter box. The critical orifices must be calibrated in the same configuration as they will be used; i.e., there should be no connections to the inlet of the orifice.

16.2.2.1.1 Before calibrating the meter box, leak-check the system as follows: Fully open the coarse adjust valve and completely close the bypass valve. Plug the inlet. Then turn on the pump and determine whether there is any leakage. The leakage rate shall be zero; i.e., no detectable movement of the DGM dial shall be seen for 1 minute.

16.2.2.1.2 Check also for leakages in that portion of the sampling train between the pump and the orifice meter. See section 5.6 of Method 5, 40 CFR part 60, appendix A for the procedure; make any corrections, if necessary. If leakage is detected, check for cracked gaskets, loose fittings, worn O-rings, etc. and make the necessary repairs.

16.2.2.1.3 After determining that the meter box is leakless, calibrate the meter box according to the procedure given in section 5.3 of Method 5, 40 CFR part 60, appendix A. Make sure that the wet test meter meets the requirements stated in section 7.1.1.1 of Method 5, 40 CFR part 60, appendix A. Check the water level in the wet test meter. Record the DGM calibration factor, Y .

16.2.2.2 Calibration of critical orifices. Set up the apparatus as shown in Figure 5-10 of Method 5, 40 CFR part 60, appendix A.

16.2.2.2.1 Allow a warm-up time of 15 minutes. This step is important to equilibrate

the temperature conditions through the DGM.

16.2.2.2.2 Leak-check the system as in section 7.2.2.1.1 of Method 5, 40 CFR part 60, appendix A. The leakage rate shall be zero.

16.2.2.2.3 Before calibrating the critical orifice, determine its suitability and the appropriate operating vacuum as follows: turn on the pump, fully open the coarse adjust valve, and adjust the bypass valve to give a vacuum reading corresponding to about half of atmospheric pressure. Observe the meter box orifice manometer reading, DH. Slowly increase the vacuum reading until a stable reading is obtained on the meter box orifice manometer. Record the critical vacuum for each orifice. Orifices that do not reach a critical value shall not be used.

16.2.2.2.4 Obtain the barometric pressure using a barometer as described in section 6.1.2 of this method. Record the barometric pressure, P_{bar} , in mm Hg (in. Hg).

16.2.2.2.5 Conduct duplicate runs at a vacuum of 25 to 50 mm Hg (1 to 2 in. Hg) above the critical vacuum. The runs shall be at least 5 minutes each. The DGM volume readings shall be in increments of complete revolutions of the DGM. As a guideline, the times should not differ by more than 3.0 seconds (this includes allowance for changes in the DGM temperatures) to achieve ± 0.5 percent in K' . Record the information listed in Figure 5-11 of Method 5, 40 CFR part 60, appendix A.

16.2.2.2.6 Calculate K' using Equation 315-11.

$$K' = \frac{K_1 V_m Y \left(P_{\text{bar}} + \frac{\Delta H}{13.6} \right) T_{\text{amb}}^{\frac{1}{2}}}{P_{\text{bar}} T_m \Theta} \quad \text{Eq. 315-11}$$

where

K' = Critical orifice coefficient, $[\text{m}^3](^\circ\text{K})^{1/2}/[(\text{mm Hg})(\text{min})]$ '61' $[(\text{ft}^3)(^\circ\text{R})^{1/2}]/[(\text{in. Hg})(\text{min})]$ '61'

T_{amb} = Absolute ambient temperature, $^\circ\text{K}$ ($^\circ\text{R}$).

16.2.2.2.7 Average the K' values. The individual K' values should not differ by more than ± 0.5 percent from the average.

16.2.3 Using the critical orifices as calibration standards.

16.2.3.1 Record the barometric pressure.

16.2.3.2 Calibrate the metering system according to the procedure outlined in sections 7.2.2.2.1 to 7.2.2.2.5 of Method 5, 40 CFR part 60, appendix A. Record the information listed in Figure 5-12 of Method 5, 40 CFR part 60, appendix A.

16.2.3.3 Calculate the standard volumes of air passed through the DGM and the critical orifices, and calculate the DGM calibration factor, Y , using the equations below:

$V_{\text{m(std)}} = K_1 V_m [P_{\text{bar}} + (\Delta H/13.6)]/T_m$ Eq. 315-12

$V_{\text{cr(std)}} = K' (P_{\text{bar}} \Theta)/T_{\text{amb}}^{1/2}$ Eq. 315-13

$Y = V_{\text{cr(std)}}/V_{\text{m(std)}} \text{ Eq. 315-14}$

where

$V_{\text{cr(std)}}$ = Volume of gas sample passed through the critical orifice, corrected to standard conditions, dscm (dscf).

$K' = 0.3858 \text{ } ^\circ\text{K}/\text{mm Hg}$ for metric units
 $= 17.64 \text{ } ^\circ\text{R}/\text{in. Hg}$ for English units.

16.2.3.4 Average the DGM calibration values for each of the flow rates. The calibration factor, Y , at each of the flow rates should not differ by more than ± 2 percent from the average.

16.2.3.5 To determine the need for recalibrating the critical orifices, compare the DGM Y factors obtained from two adjacent orifices each time a DGM is calibrated; for example, when checking orifice 13/2.5, use orifices 12/10.2 and 13/5.1. If any critical orifice yields a DGM Y factor differing by more than 2 percent from the others, recalibrate the critical orifice according to section 7.2.2.2 of Method 5, 40 CFR part 60, appendix A.

17.0 References.

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18.0 Tables, Diagrams, Flowcharts, and Validation Data

TABLE 315–1. FLOW RATES FOR VARIOUS NEEDLE SIZES AND TUBE LENGTHS.

Gauge/length (cm)	Flow rate (liters/min)	Gauge/length (cm)	Flow rate (liters/min)
12/7.6	32.56	14/2.5	19.54
12/10.2	30.02	14/5.1	17.27
13/2.5	25.77	14/7.6	16.14
13/5.1	23.50	15/3.2	14.16
13/7.6	22.37	15/7.6	11.61
13/10.2	20.67	115/10.2	10.48

FIGURE 315–1. PARTICULATE AND MCEM ANALYSES

Particulate Analysis						
Plant						
Date						
Run No.						
Filter No.						
Amount liquid lost during transport						
Acetone blank volume (ml)						
Acetone blank concentration (Eq. 315–4) (mg/mg)						
Acetone wash blank (Eq. 315–5) (mg)						
				Final weight (mg)	Tare weight (mg)	Weight gain (mg)
Container No. 1						
Container No. 2						
Total						
Less Acetone blank						
Weight of particulate matter						
				Final volume (mg)	Initial volume (mg)	Liquid collected (mg)
Moisture Analysis						
Impingers				Note 1	Note 1	
Silica gel						
Total						
Note 1: Convert volume of water to weight by multiplying by the density of water (1 g/ml).						
Container No.	Final weight (mg)	Tare of alu- minum dish (mg)	Weight gain	Acetone wash vol- ume (ml)	Methylene chloride wash vol- ume (ml)	
MCEM Analysis						
1						

Container No.	Final weight (mg)	Tare of alu- minum dish (mg)	Weight gain	Acetone wash vol- ume (ml)	Methylene chloride wash vol- ume (ml)
2+2M					
3W					
3S					
Total			$\sum m_{\text{total}}$	$\sum V_{\text{aw}}$	$\sum V_{\text{tw}}$
Less acetone wash blank (mg) (not to exceed 1 mg/l of acetone used).			$w_a = c_a p_a \sum V_{\text{aw}}$		
Less methylene chloride wash blank (mg) (not to exceed 1.5 mg/l of methylene chloride used).			$w_t = c_t p_t \sum V_{\text{tw}}$		
Less filter blank (mg) (not to exceed . . . (mg/filter)			F_b		
MCEM weight (mg)			$m_{\text{MCEM}} = \sum m_{\text{total}} - w_a - w_t - f_b$		

METHOD 319—DETERMINATION OF FILTRATION EFFICIENCY FOR PAINT OVERSPRAY ARRESTORS

1.0 Scope and Application.

1.1 This method applies to the determination of the initial, particle size dependent, filtration efficiency for paint arrestors over the particle diameter range from 0.3 to 10 μm . The method applies to single and multiple stage paint arrestors or paint arrestor media. The method is applicable to efficiency determinations from 0 to 99 percent. Two test aerosols are used—one liquid phase and one solid phase. Oleic acid, a low-volatility liquid (CAS Number 112-80-1), is used to simulate the behavior of wet paint overspray. The solid-phase aerosol is potassium chloride salt (KCl, CAS Number 7447-40-7) and is used to simulate the behavior of a dry overspray. The method is limited to determination of the initial, clean filtration efficiency of the arrestor. Changes in efficiency (either increase or decrease) due to the accumulation of paint overspray on and within the arrestor are not evaluated.

1.2 Efficiency is defined as 1—Penetration (e.g., 70 percent efficiency is equal to 0.30 penetration). Penetration is based on the ratio of the downstream particle concentration to the upstream concentration. It is often more useful, from a mathematical or statistical point of view, to discuss the upstream and downstream counts in terms of penetration rather than the derived efficiency value. Thus, this document uses both penetration and efficiency as appropriate.

1.3 For a paint arrestor system or subsystem which has been tested by this method, adding additional filtration devices to the system or subsystem shall be assumed to result in an efficiency of at least that of the original system without the requirement for additional testing. (For example, if the final stage of a three-stage paint arrestor system has been tested by itself, then the addition of

the other two stages shall be assumed to maintain, as a minimum, the filtration efficiency provided by the final stage alone. Thus, in this example, if the final stage has been shown to meet the filtration requirements of Table 1 of §63.745 of subpart GG, then the final stage in combination with any additional paint arrestor stages also passes the filtration requirements.)

2.0 Summary of Method.

2.1 This method applies to the determination of the fractional (i.e., particle-size dependent) aerosol penetration of several types of paint arrestors. Fractional penetration is computed from aerosol concentrations measured upstream and downstream of an arrestor installed in a laboratory test rig. The aerosol concentrations upstream and downstream of the arrestors are measured with an aerosol analyzer that simultaneously counts and sizes the particles in the aerosol stream. The aerosol analyzer covers the particle diameter size range from 0.3 to 10 μm in a minimum of 12 contiguous sizing channels. Each sizing channel covers a narrow range of particle diameters. For example, Channel 1 may cover from 0.3 to 0.4 μm , Channel 2 from 0.4 to 0.5 μm , * * * By taking the ratio of the downstream to upstream counts on a channel by channel basis, the penetration is computed for each of the sizing channels.

2.2 The upstream and downstream aerosol measurements are made while injecting the test aerosol into the air stream upstream of the arrestor (ambient aerosol is removed with HEPA filters on the inlet of the test rig). This test aerosol spans the particle size range from 0.3 to 10 μm and provides sufficient upstream concentration in each of the optical particle counter (OPC) sizing channels to allow accurate calculation of penetration, down to penetrations of approximately 0.01 (i.e., 1 percent penetration; 99 percent efficiency). Results are presented as

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a graph and a data table showing the aerodynamic particle diameter and the corresponding fractional efficiency.

3.0 Definitions.

Aerodynamic Diameter—diameter of a unit density sphere having the same aerodynamic properties as the particle in question.

Efficiency is defined as equal to 1—Penetration.

Optical Particle Counter (OPC)—an instrument that counts particles by size using light scattering. An OPC gives particle diameters based on size, index of refraction, and shape.

Penetration—the fraction of the aerosol that penetrates the filter at a given particle diameter. Penetration equals the downstream concentration divided by the upstream concentration.

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4.0 Interferences.

4.1 The influence of the known interferences (particle losses) are negated by correction of the data using blanks.

5.0 Safety.

5.1 There are no specific safety precautions for this method above those of good laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

6.0 Equipment and Supplies.

6.1 **Test Facility.** A schematic diagram of a test duct used in the development of the method is shown in Figure 319-1.

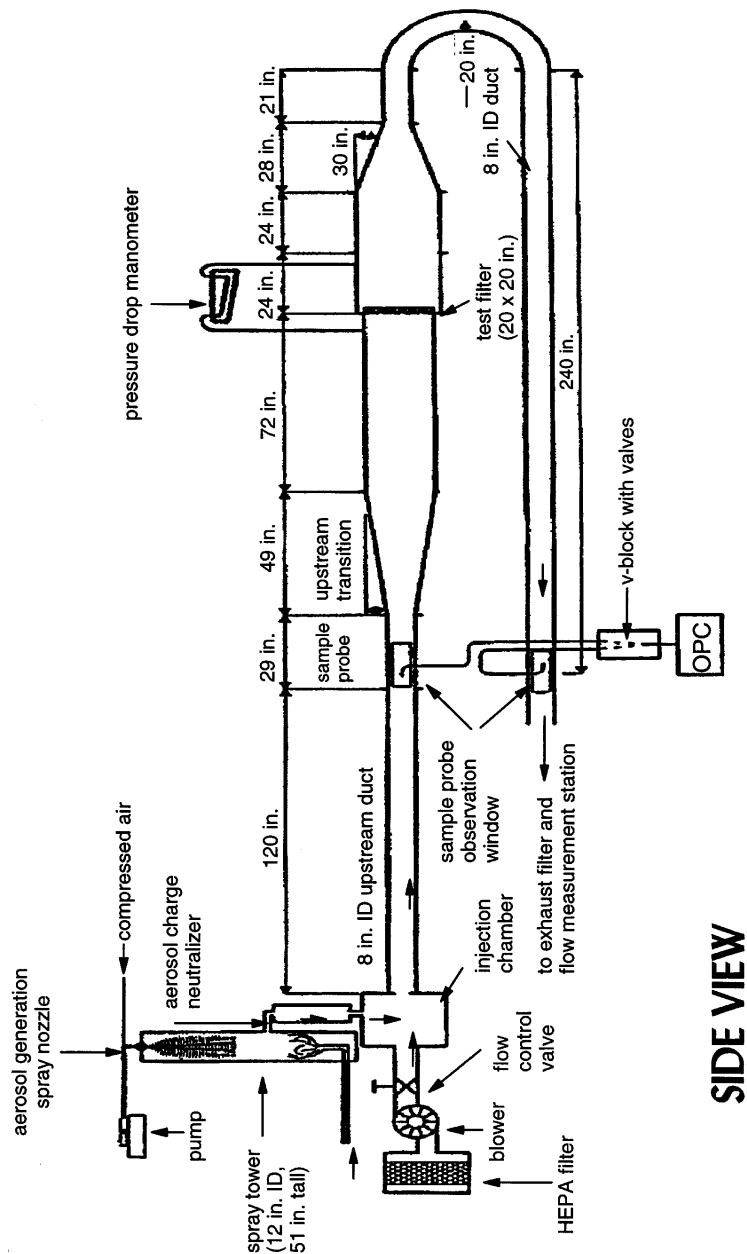


Figure 319-1. Schematic illustration of the fractional efficiency test rig.

6.1.1 The test section, paint spray section, and attached transitions are constructed of stainless and galvanized steel. The upstream and downstream ducting is 20 cm diameter

polyvinyl chloride (PVC). The upstream transition provides a 7° angle of expansion to provide a uniform air flow distribution to the paint arrestors. Aerosol concentration is

measured upstream and downstream of the test section to obtain the challenge and penetrating aerosol concentrations, respectively. Because the downstream ducting runs back under the test section, the challenge and penetrating aerosol taps are located physically near each other, thereby facilitating aerosol sampling and reducing sample-line length. The inlet nozzles of the upstream and downstream aerosol probes are designed to yield isokinetic sampling conditions.

6.1.2 The configuration and dimensions of the test duct can deviate from those of Figure 319-1 provided that the following key elements are maintained: the test duct must meet the criteria specified in Table 319-1; the inlet air is HEPA filtered; the blower is on the upstream side of the duct thereby creating a positive pressure in the duct relative to

the surrounding room; the challenge air has a temperature between 50° and 100°F and a relative humidity of less than 65 percent; the angle of the upstream transition (if used) to the paint arrestor must not exceed 7°; the angle of the downstream transition (if used) from the paint arrestor must not exceed 30°; the test duct must provide a means for mixing the challenge aerosol with the upstream flow (in lieu of any mixing device, a duct length of 15 duct diameters fulfills this requirement); the test duct must provide a means for mixing any penetrating aerosol with the downstream flow (in lieu of any mixing device, a duct length of 15 duct diameters fulfills this requirement); the test section must provide a secure and leak-free mounting for single and multiple stage arrestors; and the test duct may utilize a 180° bend in the downstream duct.

TABLE 319-1.—QC CONTROL LIMITS

	Frequency and description	Control limits
OPC zero count	Each Test. OPC samples HEPA-filtered air.	<50 counts per minute.
OPC sizing accuracy check	Daily. Sample aerosolized PSL spheres	Peak of distribution should be in correct OPC channel.
Minimum counts per channel for challenge aerosol.	Each Test	Minimum total of 500 particle counts per channel.
Maximum particle concentration	Each Test. Needed to ensure OPC is not overloaded.	<10% of manufacturer's claimed upper limit corresponding to a 10% count error.
Standard Deviation of Penetration	Computed for each test based on the CV of the upstream and downstream counts.	<0.10 for 0.3 to 3 µm diameter. <0.30 for >3 µm diameter.
0% Penetration	Monthly	<0.01.
100% Penetration—KCl	Triplicate tests performed immediately before, during, or after triplicate arrestor tests.	0.3 to 1 µm: 0.90 to 1.10. 1 to 3 µm: 0.75 to 1.25. 3 to 10 µm: 0.50 to 1.50.
100% Penetration—Oleic Acid	Triplicate tests performed immediately before, during, or after triplicate arrestor tests.	0.3 to 1 µm: 0.90 to 1.10. 1 to 3 µm: 0.75 to 1.25. 3 to 10 µm: 0.50 to 1.50.

6.2 Aerosol Generator. The aerosol generator is used to produce a stable aerosol covering the particle size range from 0.3 to 10 µm diameter. The generator used in the development of this method consists of an air atomizing nozzle positioned at the top of a 0.30-m (12-in.) diameter, 1.3-m (51-in.) tall, acrylic, transparent, spray tower. This tower allows larger sized particles, which would otherwise foul the test duct and sample lines, to fall out of the aerosol. It also adds drying air to ensure that the KCl droplets dry to solid salt particles. After generation, the aerosol passes through an aerosol neutralizer (Kr85 radioactive source) to neutralize any electrostatic charge on the aerosol (electrostatic charge is an unavoidable consequence of most aerosol generation methods). To improve the mixing of the aerosol with the air stream, the aerosol is injected counter to the airflow. Generators of other designs may be used, but they must produce a stable aerosol concentration over the 0.3 to

10 µm diameter size range; provide a means of ensuring the complete drying of the KCl aerosol; and utilize a charge neutralizer to neutralize any electrostatic charge on the aerosol. The resultant challenge aerosol must meet the minimum count per channel and maximum concentration criteria of Table 319-1.

6.3 Installation of Paint Arrestor. The paint arrestor is to be installed in the test duct in a manner that precludes air bypassing the arrestor. Since arrestor media are often sold unmounted, a mounting frame may be used to provide back support for the media in addition to sealing it into the duct. The mounting frame for 20 in. x 20 in. arrestors will have minimum open internal dimensions of 18 in. square. Mounting frames for 24 in. x 24 in. arrestors will have minimum open internal dimensions of 22 in. square. The open internal dimensions of the mounting frame shall not be less than 75 percent of the approach duct dimensions.

6.4 Optical Particle Counter. The upstream and downstream aerosol concentrations are measured with a high-resolution optical particle counter (OPC). To ensure comparability of test results, the OPC shall utilize an optical design based on wide-angle light scattering and provided a minimum of 12 contiguous particle sizing channels from 0.3 to 10 μ m diameter (based on response to PSL) where, for each channel, the ratio of the diameter corresponding to the upper channel bound to the lower channel bound must not exceed 1.5.

6.5 Aerosol Sampling System. The upstream and downstream sample lines must be made of rigid electrically-grounded metallic tubing having a smooth inside surface, and they must be rigidly secured to prevent movement during testing. The upstream and downstream sample lines are to be nominally identical in geometry. The use of a short length (100 mm maximum) of straight flexible tubing to make the final connection to the OPC is acceptable. The inlet nozzles of the upstream and downstream probes must be sharp-edged and of appropriate entrance diameter to maintain isokinetic sampling within 20 percent of the air velocity.

6.5.1 The sampling system may be designed to acquire the upstream and downstream samples using (a) sequential upstream-downstream sampling with a single OPC, (b) simultaneous upstream and downstream sampling with two OPC's, or (c) sequential upstream-downstream sampling with two OPC's.

6.5.2 When two particle counters are used to acquire the upstream and downstream counts, they must be closely matched in flowrate and optical design.

6.6 Airflow Monitor. The volumetric airflow through the system shall be measured with a calibrated orifice plate, flow nozzle, or laminar flow element. The measurement device must have an accuracy of 5 percent or better.

7.0 Reagents and Standards.

7.1 The liquid test aerosol is reagent grade, 98 percent pure, oleic acid (Table 319-2). The solid test aerosol is KCl aerosolized from a solution of KCl in water. In addition to the test aerosol, a calibration aerosol of monodisperse polystyrene latex (PSL) spheres is used to verify the calibration of the OPC.

TABLE 319-2.—PROPERTIES OF THE TEST AND CALIBRATION AEROSOLS

	Refractive index	Density, g/cm ³	Shape
Oleic Acid (liquid-phase challenge aerosol).	1.46 nonabsorbing	0.89	Spherical.
KCl (solid-phase challenge aerosol).	1.49	1.98	Cubic or agglomerated cubes.
PSL (calibration aerosol)	1.59 nonabsorbing	1.05	Spherical.

8.0 Sample Collection, Preservation, and Storage.

8.1 In this test, all sampling occurs in real-time, thus no samples are collected that require preservation or storage during the test. The paint arrestors are shipped and stored to avoid structural damage or soiling. Each arrestor may be shipped in its original box from the manufacturer or similar cardboard box. Arrestors are stored at the test site in a location that keeps them clean and

dry. Each arrestor is clearly labeled for tracking purposes.

9.0 Quality Control.

9.1 Table 319-1 lists the QC control limits.

9.2 The standard deviation (σ) of the penetration (P) for a given test at each of the 15 OPC sizing channels is computed from the coefficient of variation (CV, the standard deviation divided by the mean) of the upstream and downstream measurements as:

$$\sigma_P = P \sqrt{CV_{\text{upstream}}^2 + CV_{\text{downstream}}^2} \quad (\text{Eq. 319-1})$$

For a properly operating system, the standard deviation of the penetration is < 0.10 at particle diameters from 0.3 to 3 μ m and less than 0.30 at diameters > 3 μ m.

9.3 Data Quality Objectives (DQO).

9.3.1 Fractional Penetration. From the triplicate tests of each paint arrestor model, the standard deviation for the penetration measurements at each particle size (i.e., for each sizing channel of the OPC) is computed as:

$$s = \left[\sum (P_i - \bar{P})^2 / (n-1) \right]^{1/2} \quad (\text{Eq. 319-2})$$

where P_i represents an individual penetration measurement, and \bar{P} the average of the 3 ($n = 3$) individual measurements.

9.3.2 Bias of the fractional penetration values is determined from triplicate no-filter and HEPA filter tests. These tests determine the measurement bias at 100 percent penetration and 0 percent penetration, respectively.

9.3.3 PSL-Equivalent Light Scattering Diameter. The precision and bias of the OPC sizing determination are based on sampling a known diameter of PSL and noting whether the particle counts peak in the correct channel of the OPC. This is a pass/fail measurement with no calculations involved.

9.3.4 Airflow. The precision of the measurement must be within 5 percent of the set point.

10.0 Calibration and Standardization.

10.1 Optical Particle Counter. The OPC must have an up-to-date factory calibration. Check the OPC zero at the beginning and end of each test by sampling HEPA-filtered air. Verify the sizing accuracy on a daily basis (for days when tests are performed) with 1-size PSL spheres.

10.2 Airflow Measurement. Airflow measurement devices must have an accuracy of 5 percent or better. Manometers used in conjunction with the orifice plate must be inspected prior to use for proper level, zero, and mechanical integrity. Tubing connections to the manometer must be free from kinks and have secure connections.

10.3 Pressure Drop. Measure pressure drop across the paint arrestor with an inclined manometer readable to within 0.01 in. H₂O. Prior to use, the level and zero of the manometer, and all tubing connections, must be inspected and adjusted as needed.

11.0 Procedure.

11.1 Filtration Efficiency. For both the oleic acid and KCl challenges, this procedure is performed in triplicate using a new arrestor for each test.

11.1.1 General Information and Test Duct Preparation

11.1.1.1 Use the "Test Run Sheet" form (Figure 319-2) to record the test information.

RUN SHEET

Part 1. General Information

Date and Time: _____
 Test Operator: _____
 Test #: _____
 Paint Arrestor: _____

Brand/Model _____

Arrestor Assigned ID # _____

Condition of arrestor (i.e., is there any damage? Must be new condition to proceed): _____

Manometer zero and level confirmed? _____

Part 2. Clean Efficiency Test

Date and Time: _____

Optical Particle Counter: _____

20 min. warm up _____

Zero count (< 50 counts/min) _____

Daily PSL check _____

PSL Diam: _____ μm

File name for OPC data: _____

Test Conditions:

Air Flow: _____

Temp & RH: Temp _____ °F RH _____ %

Atm. Pressure: _____ in. Hg

(From mercury barometer)

Aerosol Generator: (record all operating parameters) _____

Test Aerosol: _____

(Oleic acid or KCl) _____

Arrestor: _____

Pressure drop: at start _____ in. H₂O

at end _____ in. H₂O

Condition of arrestor at end of test (note any physical deterioration): _____

FIGURE 319-2. TEST RUN SHEET

Other report formats which contain the same information are acceptable.

11.1.1.2 Record the date, time, test operator, Test #, paint arrestor brand/model and its assigned ID number. For tests with no arrestor, record none.

11.1.1.3 Ensure that the arrestor is undamaged and is in "new" condition.

11.1.1.4 Mount the arrestor in the appropriate frame. Inspect for any airflow leak paths.

11.1.1.5 Install frame-mounted arrestor in the test duct. Examine the installed arrestor to verify that it is sealed in the duct. For tests with no arrestor, install the empty frame.

11.1.1.6 Visually confirm the manometer zero and level. Adjust as needed.

11.1.2 Clean Efficiency Test.

11.1.2.1 Record the date and time upon beginning this section.

11.1.2.2 Optical Particle Counter.

11.1.2.2.1 General: Operate the OPC per the manufacturer's instructions allowing a minimum of 20 minutes warm up before making any measurements.

11.1.2.2.2 Overload: The OPC will yield inaccurate data if the aerosol concentration it is attempting to measure exceeds its operating limit. To ensure reliable measurements, the maximum aerosol concentration will not exceed 10 percent of the manufacturer's claimed upper concentration limit corresponding to a 10 percent count error. If this value is exceeded, reduce the aerosol concentration until the acceptable conditions are met.

11.1.2.2.3 Zero Count: Connect a HEPA capsule to the inlet of the OPC and obtain printouts for three samples (each a minimum of 1-minute each). Record maximum cumulative zero count. If the count rate exceeds 50 counts per minute, the OPC requires servicing before continuing.

11.1.2.2.4 PSL Check of OPC Calibration: Confirm the calibration of the OPC by sampling a known size PSL aerosol. Aerosolize the PSL using an appropriate nebulizer. Record whether the peak count is observed in the proper channel. If the peak is not seen in the appropriate channel, have the OPC recalibrated.

11.1.2.3 Test Conditions:

11.1.2.3.1 Airflow: The test airflow corresponds to a nominal face velocity of 120 FPM through the arrestor. For arrestors having nominal 20 in. x 20 in. face dimensions, this measurement corresponds to an airflow of 333 cfm. For arrestors having nominal face dimensions of 24 in. x 24 in., this measurement corresponds to an airflow of 480 cfm.

11.1.2.3.2 Temperature and Relative Humidity: The temperature and relative humidity of the challenge air stream will be measured to within an accuracy of $\pm 2^{\circ}\text{F}$ and ± 10 percent RH. To protect the probe from fouling, it may be removed during periods of aerosol generation.

11.1.2.3.3 Barometric Pressure: Use a mercury barometer. Record the atmospheric pressure.

11.1.2.4 Upstream and Downstream Background Counts.

11.1.2.4.1 With the arrestor installed in the test duct and the airflow set at the proper value, turn on the data acquisition computer and bring up the data acquisition program.

11.1.2.4.2 Set the OPC settings for the appropriate test sample duration with output for both printer and computer data collection.

11.1.2.4.3 Obtain one set of upstream-downstream background measurements.

11.1.2.4.4 After obtaining the upstream-downstream measurements, stop data acquisition.

11.1.2.5 Efficiency Measurements:

11.1.2.5.1 Record the arrestor pressure drop.

11.1.2.5.2 Turn on the Aerosol Generator. Begin aerosol generation and record the operating parameters.

11.1.2.5.3 Monitor the particle counts. Allow a minimum of 5 minutes for the generator to stabilize.

11.1.2.5.4 Confirm that the total particle count does not exceed the predetermined upper limit. Adjust generator as needed.

11.1.2.5.5 Confirm that a minimum of 50 particle counts are measured in the upstream sample in each of the OPC channels per sample. (A minimum of 50 counts per channel per sample will yield the required minimum 500 counts per channel total for the 10 upstream samples as specified in Table 319-1.) Adjust generator or sample time as needed.

11.1.2.5.6 If you are unable to obtain a stable concentration within the concentration limit and with the 50 count minimum per channel, adjust the aerosol generator.

11.1.2.5.7 When the counts are stable, perform repeated upstream-downstream sampling until 10 upstream-downstream measurements are obtained.

11.1.2.5.8 After collection of the 10 upstream-downstream samples, stop data acquisition and allow 2 more minutes for final purging of generator.

11.1.2.5.9 Obtain one additional set of upstream-downstream background samples.

11.1.2.5.10 After obtaining the upstream-downstream background samples, stop data acquisition.

11.1.2.5.11 Record the arrestor pressure drop.

11.1.2.5.12 Turn off blower.

11.1.2.5.13 Remove the paint arrestor assembly from the test duct. Note any signs of physical deterioration.

11.1.2.5.14 Remove the arrestor from the frame and place the arrestor in an appropriate storage bag.

11.2 Control Test: 100 Percent Penetration Test. A 100 percent penetration test must be performed immediately before each individual paint arrestor test using the same challenge aerosol substance (i.e., oleic acid or KCl) as to be used in the arrestor test. These tests are performed with no arrestor installed in the test housing. This test is a relatively stringent test of the adequacy of the overall duct, sampling, measurement, and aerosol generation system. The test is performed as a normal penetration test except the paint arrestor is not used. A perfect system would yield a measured penetration of 1 at all particle sizes. Deviations from 1 can

occur due to particle losses in the duct, differences in the degree of aerosol uniformity (i.e., mixing) at the upstream and downstream probes, and differences in particle transport efficiency in the upstream and downstream sampling lines.

11.3 Control Test: 0 Percent Penetration. One 0 percent penetration test must be performed at least monthly during testing. The test is performed by using a HEPA filter rather than a paint arrestor. This test assesses the adequacy of the instrument response time and sample line lag.

12.0 Data Analysis and Calculations.

12.1 Analysis. The analytical procedures for the fractional penetration and flow velocity measurements are described in Section 11. Note that the primary measurements, those of the upstream and downstream aerosol concentrations, are performed with the OPC which acquires the sample and analyzes it in real time. Because all the test data are collected in real time, there are no analytical procedures performed subsequent to the actual test, only data analysis.

12.2 Calculations.

12.2.1 Penetration.

Nomenclature

U = Upstream particle count
D = Downstream particle count
U_b = Upstream background count
D_b = Downstream background count
P₁₀₀ = 100 percent penetration value determined immediately prior to the arrestor test computed for each channel as:

$$P_{100} = \frac{(\bar{D} - \bar{D}_b)}{(\bar{U} - \bar{U}_b)}$$

P = Penetration of the arrestor corrected for P₁₀₀

ó = Sample standard deviation

CV = Coefficient of variation = ó/mean

E = Efficiency.

Overbar denotes arithmetic mean of quantity.

Analysis of each test involves the following quantities:

- P₁₀₀ value for each sizing channel from the 100 percent penetration control test,
- 2 upstream background values,
- 2 downstream background values,
- 10 upstream values with aerosol generator on, and
- 10 downstream values with aerosol generator on.

Using the values associated with each sizing channel, the penetration associated with each particle-sizing channel is calculated as:

$$P = \left\{ \frac{(\bar{D} - \bar{D}_b)}{(\bar{U} - \bar{U}_b)} \right\} / P_{100} \quad (\text{Eq. 319-3})$$

$$E = 1 - P \quad (\text{Eq. 319-4})$$

Most often, the background levels are small compared to the values when the aerosol generator is on.

12.3 The relationship between the physical diameter (D_{physical}) as measured by the OPC to the aerodynamic diameter (D_{Aero}) is given by:

$$D_{Aero} = D_{Physical} \sqrt{\frac{\rho_{Particle}}{\rho_o} \frac{CCF_{Physical}}{CCF_{Aero}}} \quad (\text{Eq. 319-5})$$

Where:

ρ_o = unit density of 1 g/cm³.

ρ_{Particle} = the density of the particle, 0.89 g/cm³ for oleic acid.

CCF_{Physical} = the Cunningham Correction Factor at D_{Physical}.

CCF_{Aero} = the Cunningham Correction Factor at D_{Aero}.

12.4 Presentation of Results. For a given arrestor, results will be presented for:

- Triplicate arrestor tests with the liquid-phase challenge aerosol,
 - sbull; Triplicate arrestor tests with the solid-phase challenge aerosol,

sbull; Triplicate 100 percent penetration tests with the liquid-phase challenge aerosol,

- sbull; Triplicate 100 percent penetration tests with the solid-phase challenge aerosol, and

sbull; One 0 percent filter test (using either the liquid-phase or solid-phase aerosol and performed at least monthly).

12.4.1 Results for the paint arrestor test must be presented in both graphical and tabular form. The X-axis of the graph will be a logarithmic scale of aerodynamic diameter from 0.1 to 100 μm. The Y-axis will be efficiency (%) on a linear scale from 0 to 100. Plots for each individual run and a plot of

the average of triplicate solid-phase and of the average triplicate liquid-phase tests must be prepared. All plots are to be based on point-to-point plotting (i.e., no curve fitting is to be used). The data are to be plotted based on the geometric mean diameter of each of the OPC's sizing channels.

12.4.2 Tabulated data from each test must be provided. The data must include the upper and lower diameter bound and geometric mean diameter of each of the OPC sizing channels, the background particle counts for each channel for each sample, the upstream particle counts for each channel for each sample, the downstream particle counts for each channel for each sample, the 100 percent penetration values computed for each channel, and the 0 percent penetration values computed for each channel.

13.0 Pollution Prevention.

13.1 The quantities of materials to be aerosolized should be prepared in accord with the amount needed for the current tests so as to prevent wasteful excess.

14.0 Waste Management.

14.1 Paint arrestors may be returned to originator, if requested, or disposed of with regular laboratory waste.

15.0 References.

1. Hanley, J.T., D.D. Smith and L. Cox. "Fractional Penetration of Paint Overspray Arrestors, Draft Final Report," EPA Cooperative Agreement CR-817083-01-0, January 1994.

2. Hanley, J.T., D.D. Smith, and D.S. Ensor. "Define a Fractional Efficiency Test Method that is Compatible with Particulate Removal Air Cleaners Used in General Ventilation," Final Report, 671-RP, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., December 1993.

3. "Project Work and Quality Assurance Plan: Fractional Penetration of Paint Overspray Arrestors, Category II," EPA Cooperative Agreement No. CR-817083, July 1994.

[57 FR 61992, Dec. 29, 1992, as amended at 58 FR 57924, Oct. 27, 1993; 59 FR 1992, Jan. 13, 1994; 59 FR 19590, Apr. 22, 1994; 59 FR 61816, Dec. 2, 1994; 60 FR 4979, Jan. 25, 1995; 60 FR 33122, 33123, June 27, 1995; 60 FR 62952, Dec. 7, 1995; 62 FR 2793, Jan. 17, 1997; 62 FR 12549, Mar. 17, 1997; 62 FR 52418, Oct. 7, 1997; 63 FR 15027, Mar. 27, 1998; 63 FR 18630, Apr. 15, 1998]

APPENDIX B TO PART 63—SOURCES DEFINED FOR EARLY REDUCTION PROVISIONS

Source	Location of definition
1. Organic Process Equipment in Volatile Hazardous Air Pollutant Service at Chemical Plants and Other Designated Facilities.	56 FR 9315, March 6, 1991, Announcement of Negotiated Rule-making
a. All valves in gas or light liquid service within a process unit	
b. All pumps in light liquid service within a process unit	
c. All connectors in gas or light liquid service within a process unit	
d. Each compressor	
e. Each product accumulator vessel	
f. Each agitator	
g. Each pressure relief device	
h. Each open-ended valve or line	
i. Each sampling connection system	
j. Each instrumentation system	
k. Each pump, valve, or connector in heavy liquid service	
l. Each closed vent system and control device	

APPENDIX C TO PART 63—DETERMINATION OF THE FRACTION BIODEGRADED (F_{bio}) IN A BIOLOGICAL TREATMENT UNIT

I. Purpose

The purpose of this appendix is to define the procedures for an owner or operator to use to calculate the site specific fraction of organic compounds biodegraded (F_{bio}) in a biological treatment unit. If an acceptable level of organic compounds is destroyed rather than emitted to the air or remaining in the effluent, the biological treatment unit may be used to comply with the applicable treatment requirements without the unit being covered and vented through a closed vent system to an air pollution control device.

The determination of F_{bio} shall be made on a system as it would exist under the rule. The owner or operator should anticipate changes that would occur to the wastewater flow and concentration of organics, to be treated by the biological treatment unit, as a result of enclosing the collection and treatment system as required by the rule.

The forms presented in this appendix are designed to address uniform well-mixed or completely mixed systems. Uniform well-

mixed or completely mixed systems are biological treatment activated sludge systems where measurements of parameters that indicate performance, e.g., MLVSS, organic compound concentration, and dissolved oxygen, are consistent throughout the system. Systems that are not uniform well-mixed systems should be subdivided into a series of zones that have uniform characteristics within each zone.

The number of zones required to characterize a biological treatment system will depend on the design and operation of the treatment system. The number of zones could vary from one in a well-mixed conventional activated sludge tank to numerous zones in a large surface-aerated impoundment system. Each zone should then be modeled as a separate unit. The amount of air emissions and biodegradation from the modeling of these separate zones can then be added to reflect the entire system.

II. Definitions

Biological treatment unit = wastewater treatment unit designed and operated to promote the growth of bacteria to destroy organic materials in wastewater.

f_{bio} = The fraction of individual applicable organic compounds in the wastewater biodegraded in a biological treatment unit.

F_{bio} = The fraction of total applicable organic compounds in the wastewater biodegraded in a biological treatment unit.

F_e = The fraction of applicable organic compounds emitted from the wastewater to the atmosphere.

K_1 = First order biodegradation rate constant, L/g MLVSS-hr

KL = liquid-phase mass transfer coefficient, m/s

M = compound specific mass flow weighted average of organic compounds in the wastewater, Mg/Yr

III. Procedures for Determination of f_{bio}

The first step in the analysis to determine if a biological treatment unit may be used without being covered and vented through a closed-vent system to an air pollution control device, is to determine the compound-specific f_{bio} . The following four procedures may be used to determine f_{bio} :

(1) EPA Test Method 304A or 304B (appendix A, part 63)—Method for the Determination of Biodegradation Rates of Organic Compounds,

(2) Performance data with and without biodegradation,

(3) Inlet and outlet concentration measurements,

(4) Batch Tests.

All procedures must be executed so that the resulting F_{bio} is based on the collection system and waste management units being in compliance with the regulation. If the col-

lection system and waste management units meet the suppression requirements at the time of the test, any of the four procedures may be chosen. If the collection system and waste management units are not in compliance at the time of the performance test, then only Method 304A, 304B, or the Batch Test shall be chosen. If Method 304A, 304B, or the Batch Test is used, any anticipated changes to the influent of the full-scale biological treatment unit that will occur after the facility has enclosed the collection system must be represented in the influent feed to the benchtop bioreactor unit, or test unit.

Select one or more appropriate procedures from the four listed above based on the availability of site specific data. If the facility does not have site-specific data on the removal efficiency of its biological treatment unit, then Procedure 1 or Procedure 4 may be used. Procedure 1 allows the use of a benchtop bioreactor to determine the first-order biodegradation rate constant. For compounds that represent a small proportion of the mass of the regulated compounds in the wastewater, an owner or operator may elect to assume the first order biodegradation constant is zero. Procedure 4 explains two types of batch tests which may be used to estimate the first order biodegradation rate constant. For compounds that represent a small proportion of the mass of the regulated compounds in the wastewater, an owner or operator may elect to assume the first order biodegradation constant is zero. Procedure 3 would be used if the facility has, or measures to determine, data on the inlet and outlet individual organic compound concentration for the biological treatment unit. Procedure 3 may only be used on a uniform well-mixed or completely mixed system. Procedure 2 is used if a facility has or obtains performance data on a biotreatment unit prior to and after addition of the microbial mass. An example where Procedure 2 could be used, is an activated sludge unit where measurements have been taken on inlet and exit concentration of organic compounds in the wastewater prior to seeding with the microbial mass and start-up of the unit. The flow chart in Figure 1 outlines the steps to use for each of the procedures.

A. Method 304A or 304B (Procedure 1)

If the first procedure is selected, follow the instructions in appendix A of part 63 Method 304A "Method for the Determination of Biodegradation Rates of Organic Compounds (Vented Option)" or Method 304B "Method for the Determination of Biodegradation Rates of Organic Compounds (Scrubber Option)." Method 304A or 304B provides instruction on setting up and operating a self-contained benchtop bioreactor system which is operated under conditions representative of the target full-scale system. Method 304A

uses a benchtop bioreactor system with a vent, and uses modeling to estimate any air emissions. Method 304B uses a benchtop bioreactor system which is equipped with a scrubber and is not vented.

There are some restrictions on which method a source may use. If the facility is measuring the rate of biodegradation of compounds that may tend to react or hydrolyze in the scrubber of Method 304B, this method shall not be used and Method 304A is the required method. If a Henry's law value is not available to use with Form V, then Method 304A shall not be used and Method 304B is the required method. When using either method, the feed flow to the benchtop bioreactor shall be representative of the flow and concentration of the wastewater that will be treated by the full-scale biological treatment unit after the collection and treatment system has been enclosed as required under the applicable subpart.

The conditions under which the full-scale biological treatment unit is run establish the operating parameters of Method 304A or 304B. If the biological treatment unit is operated under abnormal operating conditions (conditions outside the range of critical parameters examined and confirmed in the laboratory), the EPA believes this will adversely affect the biodegradation rate and is an unacceptable treatment option. The facility would be making multiple runs of the test method to simulate the operating range for its biological treatment unit. For wide ranges of variation in operating parameters, the facility shall demonstrate the biological treatment unit is achieving an acceptable level of control, as required by the regulation, across the ranges and not only at the endpoints.

If Method 304A is used, complete Form V initially. Form V is used to calculate K₁ from the Method 304A results. Form V uses the Henry's law constant to estimate the fraction lost from the benchtop reactor vent. The owner or operator shall use the Henry's law values in Table I. Form V also gives direction for calculating an equivalent K_L. Note on Form V if the calculated number for line 11 is greater than the calculated value for line 13, this procedure shall not be used to demonstrate the compound is biodegradable. If line 11 is greater than line 13, this is an indication the fraction emitted from the vent is greater than the fraction biodegraded. The equivalent K_L determined on Form V is used in Form II (line 6). Estimation of the F_e and f_{bio} must be done following the steps in Form III. Form III uses the previously calculated values of K₁ and K_L (equivalent K_L), and site-specific parameters of the full-scale bioreactor as input to the calculations. Forms II, III, and V must be completed for each organic compound in the wastewater to determine F_e and f_{bio}.

If Method 304B is used, perform the method and use the measurements to determine K₁, which is the first-order biodegradation rate constant. Form I lists the sequence of steps in the procedure for calculating K₁ from the Method 304B results. Once K₁ is determined, K_L must be calculated by use of mass transfer equations. Form II outlines the procedure to follow for use of mass transfer equations to determine K_L. A computer program which incorporates these mass transfer equations may be used. Water7 is a program that incorporates these mass transfer equations and may be used to determine K_L. Refer to Form II-A to determine K_L, if Water7 or the most recent update to this model is used. In addition, the Bay Area Sewage Toxics Emission (BASTE) model version 3.0 or equivalent upgrade and the TOXCHEM (Environment Canada's Wastewater Technology Centre and Environmega, Ltd.) model version 1.10 or equivalent upgrade may also be used to determine K_L for the biological treatment unit with several stipulations. The programs must be altered to output a K_L value which is based on the site-specific parameters of the unit modeled, and the Henry's law values listed in Table I must be substituted for the existing Henry's law values in the programs. Input values used in the model and corresponding output values shall become documentation of the f_{bio} determination. The owner or operator should be aware these programs do not allow modeling of certain units. To model these units, the owner or operator shall use one of the other appropriate procedures as outlined in this appendix. The owner or operator shall not use a default value for K_L. The K_L value determined by use of these models shall be based on the site-specific parameters of the specific unit. This K_L value shall be inserted in Form II (line 6). Estimation of the F_e and f_{bio} must be done following the steps in Form III. Form III uses the previously calculated values of K₁ and K_L, and site-specific parameters of the full-scale bioreactor as input to the calculations. Forms I, II, and III must be completed for each organic compound in the wastewater to determine F_e and f_{bio}.

B. Performance Data With and Without Biodegradation (Procedure 2)

Procedure 2 uses site-specific performance data that represents or characterizes operation of the unit both with and without biodegradation. As previously mentioned, proper determination of f_{bio} must be made on a system as it would exist under the rule. Using Form IV, calculate K_L and K₁. After K_L and K₁ are determined, Form III is used to calculate F_e and f_{bio} for each organic compound present in the wastewater.

C. Inlet and Outlet Concentration Measurements (Procedure 3)

Procedure 3 uses measured inlet and outlet organic compound concentrations for the unit. This procedure may only be used on a uniform well-mixed or completely mixed system. Again, proper determination of f_{bio} must be made on a system as it would exist under the rule. The first step in using this procedure is to calculate KL using Form II. A computer model may be used. If the Water7 model or the most recent update to this model is used, then use Form II-A to calculate KL. After KL is determined using field data, complete Form VI to calculate K1. The TOXCHEM or BASTE model may also be used to calculate KL for the biological treatment unit, with the stipulations listed in procedure 304B. After KL and K1 are determined, Form III is used to calculate Fe and f_{bio} for each organic compound.

D. Batch Tests (Procedure 4)

Two types of batch tests which may be used to determine kinetic parameters are: (1) The aerated reactor test and (2) the sealed reactor test. The aerated reactor test is also known as the BOX test (batch test with oxygen addition). The sealed reactor test is also known as the serum bottle test. These batch tests should be conducted only by persons familiar with procedures for determining biodegradation kinetics. Detailed discussions of batch procedures for determining biodegradation kinetic parameters can be found in references 1-4.

For both batch test approaches, a biomass sample from the activated sludge unit of interest is collected, aerated, and stored for no more than 4 hours prior to testing. To collect sufficient data when biodegradation is rapid, it may be necessary to dilute the biomass sample. If the sample is to be diluted, the biomass sample shall be diluted using treated effluent from the activated sludge unit of interest to a concentration such that the biodegradation test will last long enough to make at least six concentration measurements. It is recommended that the tests not be terminated until the compound concentration falls below the limit of quantitation (LOQ). Measurements that are below the LOQ should not be used in the data analysis. Biomass concentrations shall be determined using standard methods for measurement of mixed liquor volatile suspended solids (MLVSS) (reference 5).

The change in concentration of a test compound may be monitored by either measuring the concentration in the liquid or in the reactor headspace. The analytical technique chosen for the test should be as sensitive as possible. For the batch test procedures described in this section, equilibrium conditions must exist between the liquid and gas phases of the experiments because the data

analysis procedures are based on this premise. To use the headspace sampling approach, the reactor headspace must be in equilibrium with the liquid so that the headspace concentrations can be correlated with the liquid concentrations. Before the biodegradation testing is conducted, the equilibrium assumption must be verified. A discussion of the equilibrium assumption verification is given below in sections D.1 and D.2 since different approaches are required for the two types of batch tests.

To determine biodegradation kinetic parameters in a batch test, it is important to choose an appropriate initial substrate (compound(s) of interest) concentration for the test. The outcome of the batch experiment may be influenced by the initial substrate (S_0) to biomass (X_0) ratio (see references 3, 4, and 6). This ratio is typically measured in chemical oxygen demand (COD) units. When the S_0/X_0 ratio is low, cell multiplication and growth in the batch test is negligible and the kinetics measured by the test are representative of the kinetics in the activated sludge unit of interest. The S_0/X_0 ratio for a batch test is determined with the following equation:

$$\frac{S_0}{X_0} = \frac{S_i}{1.42 X} \text{ (Eqn App. C-1)}$$

Where:

S_0/X_0 =initial substrate to biomass ratio on a COD basis

S_i =initial substrate concentration in COD units (g COD/L)

X =biomass concentration in the batch test (g MLVSS/L)

1.42 = Conversion factor to convert to COD units

For the batch tests described in this section, the S_0/X_0 ratio (on a COD basis) must be initially less than 0.5.

1. *Aerated Reactor Test.* An aerated draft tube reactor may be used for the biokinetics testing (as an example see Figure 2 of appendix C). Other aerated reactor configurations may also be used. Air is bubbled through a porous frit at a rate sufficient to aerate and keep the reactor uniformly mixed. Aeration rates typically vary from 50 to 200 ml/min for a 1 liter system. A mass flow rate controller is used to carefully control the air flow rate because it is important to have an accurate measure of this rate. The dissolved oxygen (DO) concentration in the system must not fall below 2 mg/liter so that the biodegradation observed will not be DO-limited. Once the air flow rate is established, the test mixture (or compound) of interest is then injected into the reactor and the concentration of the compound(s) is monitored over time. Concentrations may be monitored in the liquid or in the headspace. A minimum of six samples shall be taken over the period of the

test. However, it is necessary to collect samples until the compound concentration falls below the LOQ. If liquid samples are collected, they must be small enough such that the liquid volume in the batch reactor does not change by more than 10%.

Before conducting experiments with biomass, it is necessary to verify the equilibrium assumption. The equilibrium assumption can be verified by conducting a stripping experiment using the effluent (no

biomass) from the activated sludge unit of interest. Effluent is filtered with a 0.45 μm or smaller filter and placed in the draft tube reactor. Air is sparged into the system and the compound concentration in the liquid or headspace is monitored over time. This test with no biomass may provide an estimate of the Henry's law constant. If the system is at equilibrium, the Henry's law constant may be estimated with the following equation:

$$-\ln(C/C_0) = (GK_{eq}/V)t \quad (\text{Eqn App. C-2})$$

Where:

C=concentration at time, t (min)

C₀=concentration at t=0

G=volumetric gas flow rate (ml/min)

V=liquid volume in the batch reactor (ml)

K_{eq}=Henry's law constant (mg/L-gas)/(mg/L-liquid)

t=time (min)

A plot of $-\ln(C/C_0)$ as a function of t will have a slope equal to GK_{eq}/V. The equilibrium assumption can be verified by comparing the experimentally determined K_{eq} for

the system to literature values of the Henry's Law constant (including those listed in this appendix). If K_{eq} does not match the Henry's law constant, K_{eq} shall be determined from analysis of the headspace and liquid concentration in a batch system.

The concentration of a compound decreases in the bioreactor due to both biodegradation and stripping. Biodegradation processes are typically described with a Monod model. This model and a stripping expression are combined to give a mass balance for the aerated draft tube reactor):

$$-\frac{ds}{dt} = \left(\frac{GK_{eq}}{V} \right) s + \left(\frac{Q_m X}{K_s + s} \right) s \quad (\text{Eqn App. C-3})$$

Where:

s=test compound concentration, mg/liter

G=volumetric gas flow rate, liters/hr

K_{eq}=Henry's Law constant measured in the system, (mg/liter gas)/(mg/liter liquid)

V=volume of liquid in the reactor, liters

X=biomass concentration (g MLVSS/liter)

Q_m=maximum rate of substrate removal, mg/g MLVSS/hr

K_s=Monod biorate constant at half the maximum rate, mg/liter

Equation App.C-3 has the analytical solution:

$$-t = \frac{VK_s}{A} \ln \left(\frac{s}{s_0} \right) + \frac{Q_m XV^2}{AB} \ln \left(\frac{A + Bs}{A + Bs_0} \right) \quad (\text{Eqn App. C-4})$$

Where:

A=GK_{eq} K_s + Q_m VX

B=GK_{eq}

S₀=test compound concentration at t=0

This equation is used along with the substrate concentration versus time data to determine the best fit parameters (Q_m and K_s) to describe the biodegradation process in the aerated reactor. If the aerated reactor test is

used, the following procedure is used to analyze the data. Evaluate K_{eq} for the compound of interest with Form XI. The concentration in the vented headspace or liquid is measured as a function of time and the data is entered on Form XI. A plot is made from the data and attached to the Form XI. K_{eq} is calculated on Form XI and the results are contrasted with the expected value of Henry's

law obtained from Form IX. If the comparison is satisfactory, the stripping constant is calculated from K_{eq} , completing Form XI. The values of K_{eq} may differ because the theoretical value of K_{eq} may not be applicable to the system of interest. If the comparison of the calculated K_{eq} from the form and the expected value of Henry's law is unsatisfactory, Form X can alternatively be used to validate K_{eq} . If the aerated reactor is demonstrated to not be at equilibrium, either modify the reactor design and/or operation, or use another type of batch test.

The compound-specific biorate constants are then measured using Form XII. The stripping constant that was determined from Form XI and a headspace correction factor of 1 are entered on Form XII. The aerated reactor biotest may then be run, measuring concentrations of each compound of interest as a function of time. If headspace concentrations are measured instead of liquid concentrations, then the corresponding liquid concentrations are calculated from the headspace measurements using the K_{eq} determined on Form XI and entered on Form XII.

The concentration data on Form XII may contain scatter that can adversely influence the data interpretation. It is possible to curve fit the concentration data and enter the concentrations on the fitted curve instead of the actual data. If curve fitting is used, the curve-fitting procedure must be based upon the Equation App. C-4. When curve fitting is used, it is necessary to attach a plot of the actual data and the fitted curve to Form XII.

If the stripping rate constant is relatively large when compared to the biorate at low concentrations, it may be difficult to obtain accurate evaluations of the first-order biorate constant. In these cases, either reducing the stripping rate constant by lowering the aeration rate, or increasing the biomass concentrations should be considered.

The final result of the batch testing is the measurement of a biorate that can be used to

estimate the fraction biodegraded, f_{bio} . The number transferred to Form III is obtained from Form XII, line 9.

2. *Sealed Reactor Test.* This test uses a closed system to prevent losses of the test compound by volatilization. This test may be conducted using a serum bottle or a sealed draft tube reactor (for an example see Figure 3 of appendix C). Since no air is supplied, it is necessary to ensure that sufficient oxygen is present in the system. The DO concentration in the system must not fall below 2 mg/liter so that the biodegradation observed will not be DO-limited. As an alternative, oxygen may be supplied by electrolysis as needed to maintain the DO concentration above 2 mg/liter. The reactor contents must be uniformly mixed, by stirring or agitation using a shaker or similar apparatus. The test mixture (or compound) of interest is injected into the reactor and the concentration is monitored over time. A minimum of six samples shall be taken over the period of the test. However, it is necessary to monitor the concentration until it falls below the LOQ.

The equilibrium assumption must be verified for the batch reactor system. In this case, K_{eq} may be determined by simultaneously measuring gas and liquid phase concentrations at different times within a given experiment. A constant ratio of gas/liquid concentrations indicates that equilibrium conditions are present and K_{eq} is not a function of concentration. This ratio is then taken as the K_{eq} for the specific compound in the test. It is not necessary to measure K_{eq} for each experiment. If the ratio is not constant, the equilibrium assumption is not valid and it is necessary to (1) increase mixing energy for the system and retest for the equilibrium assumption, or (2) use a different type of test (for example, a collapsible volume reactor).

The concentration of a compound decreases in the bioreactor due to biodegradation according to Equation App. C-5:

$$\frac{ds}{dt} = \left[\frac{-V_l}{V_g K_{eq} + V_l} \right] \left[\left(\frac{Q_m X}{K_s + s} \right) s \right] \quad (\text{Eqn App. C-5})$$

Where:

s =test compound concentration (mg/liters)

V_l =the average liquid volume in the reactor (liters)

V_g =the average gas volume in the reactor (liters)

Q_m =maximum rate of substrate removal (mg/g ML VSS/hr)

K_{eq} =Henry's Law constant determined for the test, (mg/liter gas)/(mg/liter liquid)

K_s =Monod biorate constant at one-half the maximum rate (mg/liter)

t =time (hours)

X =biomass concentration (g ML VSS/liter)

s_0 =test compound concentration at time $t=0$

Equation App. C-5 can be solved analytically to give:

$$t = \frac{-(V_s K_{eg} + V_l)}{V_l Q_m X} \left[(s - s_0) + K_s \ln \left(\frac{s}{s_0} \right) \right] \quad (\text{Eqn App. C-6})$$

This equation is used along with the substrate concentration versus time data to determine the best fit parameters (Q_m and K_s) to describe the biodegradation process in the sealed reactor.

If the sealed reactor test is used, Form X is used to determine the headspace correction factor. The disappearance of a compound in the sealed reactor test is slowed because a fraction of the compound is not available for biodegradation because it is present in the headspace. If the compound is almost entirely in the liquid phase, the headspace correction factor is approximately one. If the headspace correction factor is substantially less than one, improved mass transfer or reduced headspace may improve the accuracy of the sealed reactor test. A preliminary sealed reactor test must be conducted to test the equilibrium assumption. As the compound of interest is degraded, simultaneous headspace and liquid samples should be collected and Form X should be used to evaluate K_{eq} . The ratio of headspace to liquid concentrations must be constant in order to confirm that equilibrium conditions exist. If equilibrium conditions are not present, additional mixing or an alternate reactor configuration may be required.

The compound-specific biorate constants are then calculated using Form XII. For the sealed reactor test, a stripping rate constant of zero and the headspace correction factor that was determined from Form X are entered on Form XII. The sealed reactor test may then be run, measuring the concentrations of each compound of interest as a function of time. If headspace concentrations are measured instead of liquid concentrations, then the corresponding liquid concentrations are calculated from the headspace measurements using K_{eq} from Form X and entered on Form XII.

The concentration data on Form XII may contain scatter that can adversely influence the data interpretation. It is possible to curve fit the concentration data and enter the concentrations on the fitted curve instead of the actual data. If curve fitting is used, the curve-fitting procedure must be based upon Equation App. C-6. When curve fitting is used, it is necessary to attach a plot of the actual data and the fitted curve to Form XII.

If a sealed collapsible reactor is used that has no headspace, the headspace correction factor will equal 1, but the stripping rate constant may not equal 0 due to diffusion losses through the reactor wall. The ratio of

the rate of loss of compound to the concentration of the compound in the reactor (units of per hour) must be evaluated. This loss ratio has the same units as the stripping rate constant and may be entered as the stripping rate constant on line 1 of Form XII.

If the loss due to diffusion through the walls of the collapsible reactor is relatively large when compared to the biorate at low concentrations, it may be difficult to obtain accurate evaluations of the first-order biorate constant. In these cases, either replacing the materials used to construct the reactor with materials of low permeability or increasing the biomass concentration should be considered.

The final result of the batch testing is the measurement of a biorate that can be used to estimate the fraction biodegraded, f_{bio} . The number transferred to Form III is obtained from Form XII, line 9.

The number on Form XII line 9 will equal the Monod first-order biorate constant if the full-scale system is operated in the first-order range. If the full-scale system is operated at concentrations above that of the Monod first-order range, the value of the number on line 9 will be somewhat lower than the Monod first-order biorate constant. With supporting biorate data, the Monod model used in Form XII may be used to estimate the effective biorate constant K_1 for use in Form III.

If a reactor with headspace is used, analysis of the data using equation App. C-6 is valid only if V_l and V_g do not change more than 10% (i.e., they can be approximated as constant for the duration of the test). Since biodegradation is occurring only in the liquid, as the liquid concentration decreases it is necessary for mass to transfer from the gas to the liquid phase. This may require vigorous mixing and/or reducing the volume in the headspace of the reactor.

If there is no headspace (e.g., a collapsible reactor), equation App. C-6 is independent of V_l and there are no restrictions on the liquid volume. If a membrane or bag is used as the collapsible-volume reactor, it may be important to monitor for diffusion losses in the system. To determine if there are losses, the bag should be used without biomass and spiked with the compound(s) of interest. The concentration of the compound(s) in the reactor should be monitored over time. The data are analyzed as described above for the sealed reactor test.

3. *Quality Control/Quality Assurance (QA/QC)*. A QA/QC plan outlining the procedures used to determine the biodegradation rate constants shall be prepared and a copy maintained at the source. The plan should include, but may not be limited to:

1. A description of the apparatus used (e.g., size, volume, method of supplying air or oxygen, mixing, and sampling procedures) including a simplified schematic drawing.

2. A description of how biomass was sampled from the activated sludge unit.

3. A description of how biomass was held prior to testing (age, etc.).

4. A description of what conditions (DO, gas-liquid equilibrium, temperature, etc.) are important, what the target values are, how the factors were controlled, and how well they were controlled.

5. A description of how the experiment was conducted, including preparation of solutions, dilution procedures, sampling procedures, monitoring of conditions, etc.

6. A description of the analytical instrumentation used, how the instruments were calibrated, and a summary of the precision for that equipment.

7. A description of the analytical procedures used. If appropriate, reference to an ASTM, EPA or other procedure may be used. Otherwise, describe how the procedure is done, what is done to measure precision, accuracy, recovery, etc., as appropriate.

8. A description of how data are captured, recorded, and stored.

9. A description of the equations used and their solutions, including a reference to any software used for calculations and/or curve-fitting.

IV. Calculation of F_{bio}

At this point, the individual f_{bio} s determined by the previously explained procedures must be summed to obtain the total F_{bio} . To determine the F_{bio} multiply each compound specific f_{bio} by the compound-specific average mass flow rate of the organic compound in the wastewater stream (see regulation for instruction on calculation of average mass flow rate). Sum these products and divide by the total wastewater stream average mass flow rate of organic compounds.

$$F_{bio} = \frac{\sum_{i=1}^N (f_{bio,i} \times M_i)}{\sum_{i=1}^n M_i} \quad (\text{Eqn App. C - 7})$$

M =compound specific average mass flow rate of the organic compounds in the wastewater (Mg/Yr)

n =number of organic compounds in the wastewater

The F_{bio} is then used in the applicable compliance equations in the regulation to determine if biodegradation may be used to comply with the treatment standard without covering and venting to an air pollution control device.

References

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2. Ellis, T.G. et al. "Determination of Toxic Organic Chemical Biodegradation Ki-

netics Using Novel Respirometric Technique". Proceedings Water Environment Federation, 67th Annual Conference, October 15-19, 1994.

3. Pitter, P. and J. Chudoba. Biodegradability of Organic Substances in the Aquatic Environment. CRC Press, Boca Raton, FL, 1990.

4. Grady, C.P.L., B. Smets, and D. Barbeau. Variability in kinetic parameter estimates: A review of possible causes and a proposed terminology. Wat. Res. 30 (3), 742-748, 1996.

5. Eaton, A.D., et al. eds., Standard Methods for the Examination of Water and Wastewater, 19th Edition, American Public Health Association, Washington, DC, 1995.

6. Chudoba P., B. Capdeville, and J. Chudoba. Explanation of biological meaning of the So/Xo ratio in batch cultivation. Wat. Sci. Tech. 26 (3/4), 743-751, 1992.

TABLE I

Compound	H_L @ 25°C (atm/mole frac)	H_L @ 100°C (atm/mole frac)
1 Acetaldehyde	4.87e+00	5.64e+01

TABLE I—Continued

Compound	H _L @ 25°C (atm/mole frac)	H _L @ 100°C (atm/mole frac)
3 Acetonitrile	1.11e+00	1.78e+01
4 Acetophenone	5.09e-01	2.25e+01
5 Acrolein	4.57e+00	6.61e+01
8 Acrylonitrile	5.45e+00	6.67e+01
9 Allyl chloride	5.15e+02	2.26e+03
10 Aniline	9.78e-02	1.42e+00
12 Benzene	3.08e+02	1.93e+03
14 Benzyl chloride	1.77e+01	2.88e+02
15 Biphenyl	2.27e+01	1.27e+03
17 Bromoform	2.96e+01	3.98e+02
18 1,3-Butadiene	3.96e+03	1.56e+04
20 Carbon disulfide	1.06e+03	3.60e+03
21 Carbon tetrachloride	1.68e+03	1.69e+04
23 2-Chloroacetophenone	4.84e-02	1.43e+01
24 Chlorobenzene	2.09e+02	3.12e+03
25 Chloroform	2.21e+02	1.34e+03
26 Chloroprene	5.16e+01	1.74e+02
29 o-Cresol	9.12e-02	2.44e+01
31 Cumene	7.28e+02	7.15e+03
32 1,4-Dichlorobenzene(p)	1.76e+02	1.95e+03
33 Dichloroethyl ether	1.14e+00	3.57e+01
34 1,3-Dichloropropene	1.97e+02	1.44e+03
36 N,N-Dimethylaniline	7.70e-01	5.67e+02
37 Diethyl sulfate	3.41e-01	4.22e+01
38 3,3'-Dimethylbenzidine	7.51e-05	5.09e-01
40 1,1-Dimethylhydrazine	9.11e-02	1.57e+01
42 Dimethyl sulfate	2.23e-01	1.43e+01
43 2,4-Dinitrophenol	2.84e-01	1.50e+02
44 2,4-Dinitrotoluene	4.00e-01	9.62e+00
45 1,4-Dioxane	3.08e-01	9.53e+00
47 Epichlorohydrin	1.86e+00	4.34e+01
48 Ethyl acrylate	1.41e+01	3.01e+02
49 Ethylbenzene	4.38e+02	4.27e+03
50 Ethyl chloride (chloroethane)	6.72e+02	3.10e+03
51 Ethylene dibromide	3.61e+01	5.15e+02
52 Ethylene dichloride (1,2-Dichloroethane)	6.54e+01	5.06e+02
54 Ethylene oxide	1.32e+01	9.09e+01
55 Ethyldene dichloride (1,1-Dichloroethane)	3.12e+02	2.92e+03
57 Ethylene glycol dimethyl ether	1.95e+00	4.12e+01
60 Ethylene glycol monoethyl ether acetate	9.86e-02	6.03e+00
62 Ethylene glycol monomethyl ether acetate	1.22e-01	6.93e+00
64 Diethylene glycol dimethyl ether	8.38e-02	4.69e+00
69 Diethylene glycol diethyl ether	1.19e-01	7.71e+00
72 Ethylene glycol monobutyl ether acetate	2.75e-01	2.50e+01
73 Hexachlorobenzene	9.45e+01	2.57e+04
74 Hexachlorobutadiene	5.72e+02	6.92e+03
75 Hexachloroethane	4.64e+02	7.49e+04
76 Hexane	4.27e+04	9.44e+04
78 Isophorone	3.68e-01	1.68e+01
80 Methanol	2.89e-01	7.73e+00
81 Methyl bromide (Bromomethane)	3.81e+02	2.12e+03
82 Methyl chloride (Chloromethane)	4.90e+02	2.84e+03
83 Methyl chloroform (1,1,1-Trichloroethane)	9.67e+02	5.73e+03
84 Methyl ethyl ketone (2-Butanone)	7.22e+00	5.92e+01
86 Methyl isobutyl ketone (Hexone)	2.17e+01	3.72e+02
88 Methyl methacrylate	7.83e+00	9.15e+01
89 Methyl tert-butyl ether	3.08e+01	2.67e+02
90 Methylene chloride (Dichloromethane)	1.64e+02	9.15e+02
93 Naphthalene	2.68e+01	7.10e+02
94 Nitrobenzene	1.33e+00	2.80e+01
96 2-Nitropropane	6.61e+00	8.76e+01
99 Phosgene	7.80e+02	3.51e+03
102 Propionaldehyde	3.32e+00	1.42e+02
103 Propylene dichloride	1.59e+02	1.27e+03
104 Propylene oxide	1.98e+01	1.84e+02
106 Styrene	1.45e+02	1.72e+03
107 1,1,2,2-Tetrachloroethane	1.39e+01	1.99e+02
108 Tetrachloroethylene (Perchloroethylene)	9.83e+02	1.84e+04
109 Toluene	3.57e+02	2.10e+03
112 o-Toluidine	1.34e-01	1.15e+01

TABLE I—Continued

Compound		H _L @ 25°C (atm/mole frac)	H _L @ 100°C (atm/mole frac)
113	1,2,4-Trichlorobenzene	1.07e+02	1.04e+03
114	1,1,2-Trichloroethane	4.58e+01	5.86e+02
115	Trichloroethylene	5.67e+02	7.66e+03
116	2,4,5-Trichlorophenol	4.84e – 01	6.27e+01
117	Triethylamine	6.94e+00	2.57e+02
118	2,2,4-Trimethylpentane	1.85e+05	9.74e+05
119	Vinyl acetate	2.82e+01	2.80e+02
120	Vinyl chloride	1.47e+03	6.45e+03
121	Vinylidene chloride (1,1-Dichloroethylene)	1.44e+03	1.40e+04
123	m-Xylene	4.13e+02	3.25e+03
124	o-Xylene	2.71e+02	2.55e+03
125	p-Xylene	4.13e+02	3.20e+03

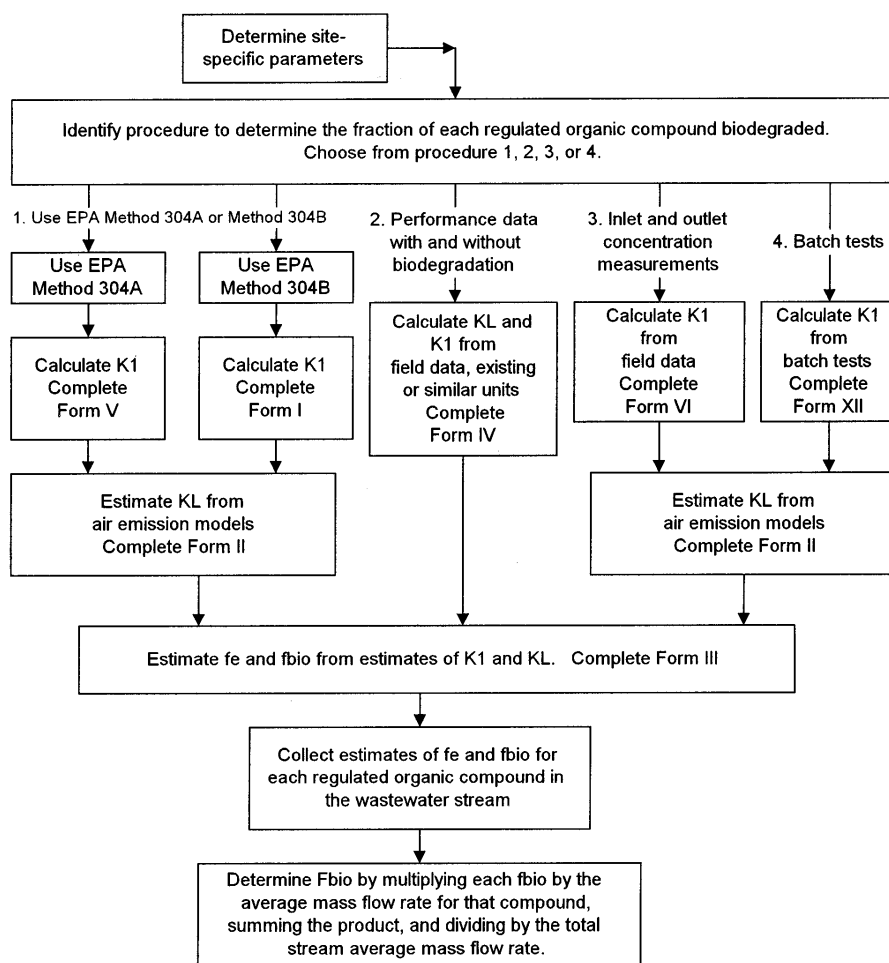


Figure 1. ALTERNATIVE EXPERIMENTAL METHODS FOR DETERMINING THE FRACTION OF ORGANIC COMPOUND BIODEGRADED (F_{bio}) IN A BIOLOGICAL TREATMENT UNIT

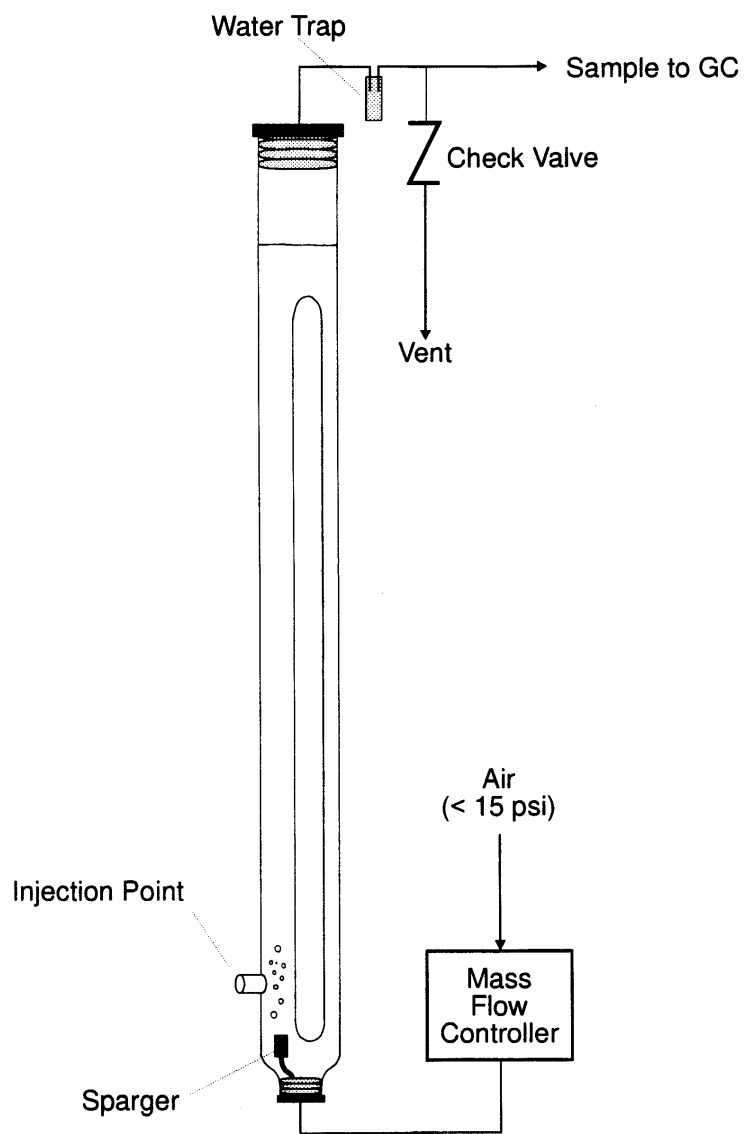


Figure 2. Example Aerated Draft Tube Reactor

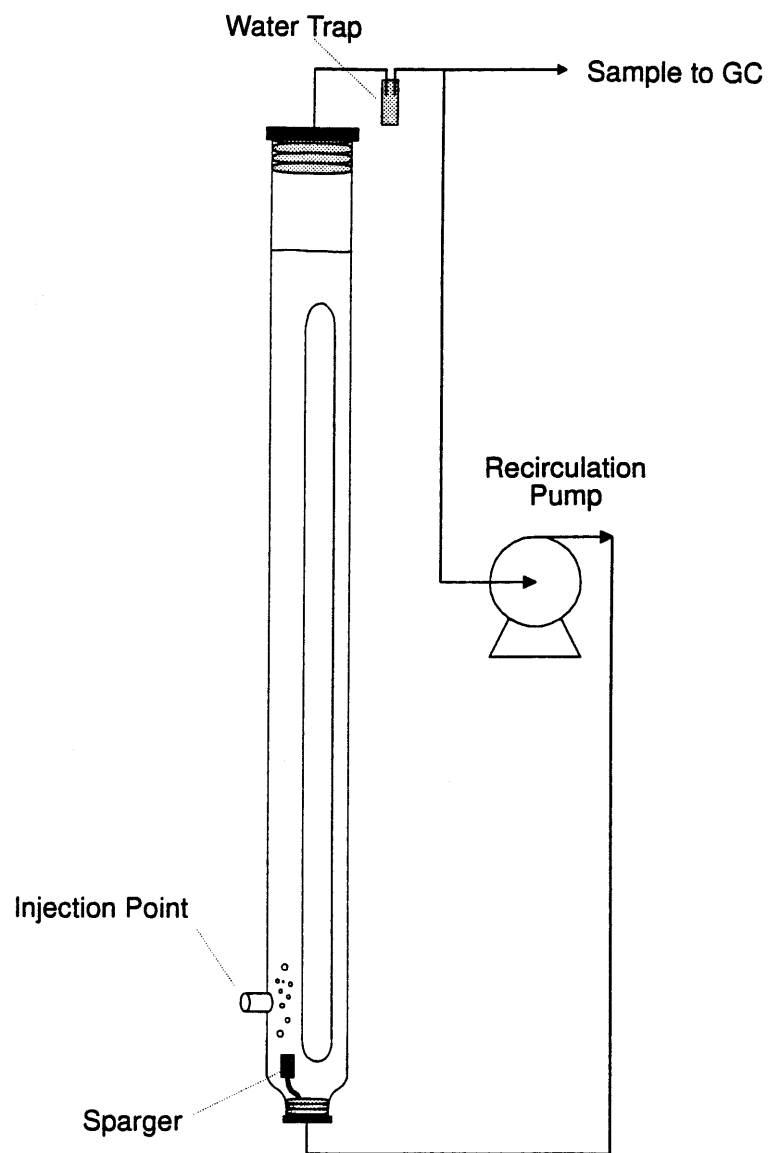


Figure 3. Example Sealed Draft Tube Reactor

Form I DATA FORM FOR THE ESTIMATION OF THE EPA METHOD 304B FIRST ORDER BIORATE CONSTANT			
NAME OF THE FACILITY for site specific biorate determination			Example
COMPOUND for site specific biorate determination			METHANOL
INLET CONCENTRATION used in EPA METHOD 304B	1		78
EXIT CONCENTRATION measured by EPA METHOD 304B	2		6
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the bench scale bioreactor.	3		0.075
TEMPERATURE OF BIOREACTOR (deg. C)	4		35
VOLUME of EPA METHOD 304B bench scale bioreactor (L)	5		6
FLOW RATE of waste treated in the bench scale bioreactor (L/hr)	6		0.146
CALCULATIONS FROM EPA METHOD 304B DATA MEASUREMENTS			
RESIDENCE TIME (hr) Divide the number on line 5 by the number on line 6 and enter the results here.	7		41.10
Concentration Decrease (g/m ³). Subtract the number on line 2 from the number on line 1 and enter the results here.	8		72.00
BIORATE (g/m ³ -hr). Divide the number on line 8 by the number on line 7 and enter the results here.	9		1.75
Product of concentration and biomass. Multiply the number on line 2 by the number on line 3 and enter the results here.	10		0.45
BIORATE K1 (L/g bio-hr) Divide the number on line 9 by the number on line 10 and enter the results here.	11		3.89
Temperature adjustment. Subtract 25 deg. C from the number on line 4 and enter the results here.	12		10
Temperature adjustment factor. 1.046 is the default temperature adjustment factor. Enter the temperature adjustment factor here.	13		1.046
Biorate temperature ratio. Raise the number on line 13 to the power of the number on line 12.	14		1.567
BIORATE K1 at 25 deg. C (L/g MLVSS-hr) Divide the number on line 11 by the number on line 14 and enter the results here.	15		2.48

Note: With Monod kinetics, use $K_{max}=1000$ to convert the Monod kinetics to first order. If a different temperature adjustment factor than the default is entered on line 13, make sure that the adjustment factor used in the calculations agrees with the value entered on line 13.

Form II				PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM UNIT SPECIFICATIONS		
NAME OF THE FACILITY for site specific biorate determination						
NAME OF UNIT for site specific biorate determination						
NAME OF COMPOUND						
HENRY'S LAW constant for the compound (mole fraction in gas per mole fraction in water at 25 degrees Celsius)						
IDENTIFY THE TYPE OF UNIT (check one box below)						
	Quiescent impoundment	1				
	Surface agitated impoundment	2				
	Surface agitated impoundment with submerged air	3				
	Unit agitated by submerged aeration gas	4				
	EPA Method 304A, Covered unit, UNOX system, or bench scale reactor	5				
PROCEDURES BASED UPON THE TYPE OF UNIT						
UNIT	PROCEDURE TO FOLLOW					
1	Use the quiescent impoundment model to determine KL. Use Kq as KL as determined from Form VII.					
2	Use the quiescent impoundment model to determine KL for the quiescent zone, Form VII. Use the aerated impoundment model to determine KL for the agitated surface, Form VIII.					
3	Use the quiescent impoundment model to determine Kq for the quiescent zone, Form VII. Use the aerated impoundment model to determine KL for the agitated surface, Form VIII. The total system KL is the sum of the KL from Form VIII and the equivalent KL from Form V. Use the submerged air rate as the vent rate in form V.					
4	Use the aerated impoundment model to determine KL if the surface is agitated. Use the quiescent impoundment model if the surface is not agitated. KL includes the effect of volatilization in the air discharge. See section 5.6.1 in AIR EMISSIONS MODELS FOR WASTE AND WASTEWATER (EPA-453/R-94-080A). The total system KL is the sum of the KL from Form VIII and the equivalent KL from Form V. Use the submerged air rate as the vent rate in Form V.					
5	KL for the surface is assumed to be equal zero. Determine equivalent KL based upon air discharge. Use Form V for EPA Method 304A or if the concentration in the vent is not measured. Use Form V-A if the concentration in the vent is measured.					
Estimate of KL obtained from above procedures (m/s)					6	

Form II-A		PROCEDURES FORM FOR THE ESTIMATION OF THE KL FROM WATER 7	
NAME OF THE FACILITY for site specific biorate determination			
NAME OF UNIT for site specific biorate determination			
NAME OF COMPOUND			
HENRY'S LAW COMPOUND			
IDENTIFY THE TYPE OF UNIT		(check one box below)	
	Quiescent impoundment	1	
	Surface agitated impoundment	2	
	Surface agitated impoundment with submerged air	3	
	Unit agitated by submerged aeration gas	4	
	Covered unit, UNOX system, bench scale reactor	5	
PROCEDURES BASED UPON THE TYPE OF UNIT			
unit	procedure to follow		
1	Use the quiescent impoundment model to determine KL.		
2	Use the aerated impoundment model to determine KL for the combined agitated surfaces and quiescent surfaces.		
3	Use the aerated impoundment model to determine KL for the combined agitated surfaces and quiescent surfaces.		
4	Use the aerated impoundment model to determine KL if the surface is agitated. Use the quiescent impoundment model if the surface is not agitated. KL includes the effect of volatilization in the air discharge. See section 5.6.1 in AIR EMISSIONS MODELS FOR WASTE AND WASTEWATER (EPA-453/R-94-080A).		
5	KL for the surface is assumed to equal zero. Select the covered unit option with the aerated impoundment model.		

Form III DATA FORM FOR THE ESTIMATION OF THE COMPOUND FRACTION BIODEGRADED AND AIR EMISSIONS			
NAME OF THE FACILITY for site specific biorate determination			example
COMPOUND for site specific biorate determination			methanol
ESTIMATE OF K ₁ from Form I line 11, Form V line 15, Form V-A line 15, Form IV line 14, Form VI line 13, or Form XII line 9. (L/g MLVSS-hr)	1		3.89
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.	2		2.4
VOLUME of full-scale system (cubic meters)	3		2700
AREA of the liquid surface of the full-scale system (square meters)	4		1500
ESTIMATE OF K _L from Form II, II-A, IV, V, V-A, or V-B (m/s)	5		0.000036
FLOW RATE of waste treated in full-scale bioreactor (m ³ /s)	6		0.1565
CALCULATIONS FROM ESTIMATES OF K ₁ AND K _L			
BIORATE (m ³ /s) Multiply the numbers on lines 1, 2, and 3 together and divide the results by 3600. Enter the results here.	7		7.0020000
AIR STRIPPING (m ³ /s). Multiply the numbers on lines 4 and 5 together. Enter the results here.	8		0.0054000
EFFLUENT DISCHARGE (m ³ /s). Enter the number on line 6 here.	9		0.1565000
TOTAL of the three loss mechanisms. Add the numbers on lines 7, 8, and 9. Enter the results here.	10		7.1639000
Fraction biodegraded: Divide the number on line 7 by the number on line 10 and enter the results here.	11		0.9774006
Fraction air emissions: Divide the number on line 8 by the number on line 10 and enter the results here.	12		0.0007538
Fraction remaining in unit effluent: Divide the number on line 9 by the number on line 10 and enter the results here.	13		0.0218456
Total: add the numbers on lines 11, 12, and 13. The sum should equal 1.0	14		1.0000000

Form IV DATA FORM FOR THE ESTIMATION OF K1 AND KL FROM FULL SCALE UNIT DATA WITH AND WITHOUT BIODEGRADATION			
For a general discussion of this approach, see Air Emissions Models for Waste and Wastewater, EPA-453/R-94-080A, Chapter 5, November 1994.			
NAME OF THE FACILITY for site specific biorate determination			example
COMPOUND for site specific biorate determination			methanol
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.	1		2.4
VOLUME of full-scale system (cubic meters)	2		2700
AREA of the liquid surface of the full-scale system (square meters)	3		1500
INLET CONCENTRATION of compound (g/m ³ or ppmw)	4		133.5
EXIT CONCENTRATION of compound (g/m ³ or ppmw)	5		10.57
EXIT CONCENTRATION (NO BIODEGRADATION) of compound (g/m ³ or ppmw)	6		133
FLOW RATE of waste treated in the full-scale bioreactor (m ³ /s)	7		0.1565
ESTIMATES OF K1 AND KL FROM FIELD DATA WITH AND WITHOUT BIODEGRADATION			
REMOVAL WITH BIODEGRADATION (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 7. Enter the results here.	8		19.238545
REMOVAL WITHOUT BIODEGRADATION (g/s) Subtract the number on line 6 from the number on line 4 and multiply the results by the number on line 7. Enter the results here.	9		0.078250
KL A ESTIMATE (m ³ /s) Divide the number on line 9 by the number on line 6. Enter the results here.	10		0.000588
K1 B V + KL A ESTIMATE (m ³ /s) Divide the number on line 8 by the number on line 5. Enter the results here.	11		1.820108
K1 B V ESTIMATE (m ³ /s) Subtract the number on line 10 from the number on line 11. Enter the results here.	12		1.819520
Product of B and V. Multiply the number on line 1 by the number on line 2 and enter the results here.	13		6480
K1 ESTIMATE (L/gMLVSS-hr) Divide the number on line 12 by the number on line 13 and multiply by 3600 s/hr. Enter the results here.	14		1.010844
KL ESTIMATE (m/s) Divide the number on line 10 by the number on line 3. Enter the results here.	15		0.0000004

Form V DATA FORM FOR THE ESTIMATION OF K ₁ FOR EPA METHOD 304A OR FROM A COVERED, VENTED BIODEGRADATION UNIT.			
For a general discussion of this approach, see Air Emissions Models for Waste and Wastewater, EPA-453/R-94-080A, Chapter 5, November 1994			
NAME OF THE FACILITY for site specific biorate determination			example
COMPOUND for site specific biorate determination			methanol
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the unit.	1		0.075
VENT RATE of total gas leaving the unit (G, m ³ /s)	2		1
TEMPERATURE of the liquid in the unit (deg. C)	3		25
INLET CONCENTRATION of compound (g/m ³ or ppmw)	4		100
EXIT CONCENTRATION of compound (g/m ³ or ppmw)	5		5
ESTIMATE OF Henry's law constant (H, g/m ³ in gas / g/m ³ in liquid). Obtained from Form IX	6		0.00021
AREA OF REACTOR (m ²)	7		3400
VOLUME OF REACTOR (m ³)	8		10000
FLOW RATE of waste treated in the unit (m ³ /s)	9		0.146
CALCULATION OF THE ESTIMATE OF K ₁			
TOTAL REMOVAL (g/s) Subtract the number on line 5 from the number on line 4 and multiply the result by the number on line 9. Enter the results here.	10		13.870000
[H G] ESTIMATE (m ³ /s) Multiply the number on line 2 by the number on line 6. Enter the results here.	11		0.000021
[K ₁ B V + H G] (m ³ /s) Divide the number on line 10 by the number on line 5. Enter the results here.	12		2.774000
[K ₁ B V] ESTIMATE (m ³ /s) Subtract the number on line 11 from the number on line 12. Enter the results here.	13		2.773979
If the number on line 11 is greater than the number on line 13, this procedure cannot be used to demonstrate that the compound is biodegradable. Do not complete lines 14 and 15.			
Product of B and V. Multiply the number on line 1 by the number on line 8 and enter the results here.	14		750.000000
K ₁ ESTIMATE (L/g MLVSS-hr) Divide the number on line 13 by the number on line 14 and multiply by 3600 s/hr. Enter the results here.	15		13.315099
EQUIVALENT K _L . Divide the number on line 11 by the number on line 7. Enter the results on line 16.	16		6.18e-09

This form may be used to estimate the Equivalent K_L with input data for lines 2, 6, and 7.

Form V-A DATA FORM FOR THE CALCULATION OF K ₁ FROM A COVERED, VENTED BIODEGRADABLE UNIT. THE VENT CONCENTRATION IS MEASURED.			
For a general discussion of this approach, see Air Emissions Models for Waste and Wastewater, EPA-453/R-94-080A, Chapter 5, November 1994.			
NAME OF THE FACILITY for site specific biorate determination			example
COMPOUND for site specific biorate determination			methanol
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the unit.	1		0.075
VENT RATE of total gas leaving the unit (G, m ³ /s)	2		.1
TEMPERATURE of the liquid in the unit (deg. C)	3		25
INLET CONCENTRATION of compound (C _i , g/m ³ or ppmw)	4		100
EXIT CONCENTRATION of compound (C _e , g/m ³ or ppmw)	5		5
VENT CONCENTRATION of compound (C _v , g/m ³)	6		0.001
AREA OF REACTOR SURFACE (m ²)	7		3400
VOLUME OF REACTOR (m ³)	8		10000
FLOW RATE of waste treated in the unit (m ³ /s)	9		0.146
CALCULATION OF THE ESTIMATE OF K ₁			
TOTAL REMOVAL (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 9. Enter the results here.	10		13.87
[G C _v /C _e] ESTIMATE (m ³ /s) Multiply the number on line 2 by the number on line 6 and divide by the number on line 5. Enter the results here.	11		0.000020
[K ₁ B V + G C _v /C _e] (m ³ /s) Divide the number on line 10 by the number on line 5. Enter the results here.	12		2.77
[K ₁ B V] ESTIMATE (m ³ /s) Subtract the number on line 11 from the number on line 12. Enter the results here.	13		2.77
If the number on line 11 is greater than the number on line 13, this procedure cannot be used to demonstrate that the compound is biodegradable. Do not complete lines 14 and 15.			
Product of B and V. Multiply the number on line 1 by the number on line 8 and enter the results here.	14		750.00
K ₁ ESTIMATE (L/g MLVSS-hr) Divide the number on line 13 by the number on line 14 and multiply by 3600 s/hr. Enter the results here.	15		13.30
EQUIVALENT K _L . Divide the number on line 11 by the number on line 7. Enter the results here.	16		5.9e-09

This form may be used to calculate the Equivalent K_L with input data for lines 2, 5, 6, and 7.

Form V-B DATA FORM FOR THE CALCULATION OF EQUIVALENT KL FROM A VENTED BIODEGRADATION UNIT WITH AN AIR SUPPORTED COVER. THE VENT CONCENTRATION IS MEASURED.			
NAME OF THE FACILITY for site specific biorate determination			example
COMPOUND for site specific biorate determination			methanol
Vent rate of total gas entering the cover (m ³ /s)	1		120
Vent rate of total gas leaving the cover transferred to a control device (m ³ /s)	2		100
TEMPERATURE of the liquid in the unit (deg. C)	3		25
Area of air supported cover (m ²)	4		1950
Permeability through the cover (cm/s)	5		5E-6
VENT CONCENTRATION of compound (g/m ³)	6		0.0022
EXIT CONCENTRATION of compound (g/m ³ or ppmw)	7		10.57
AREA OF REACTOR SURFACE (m ²)	8		1500
Performance of vent control device (% control)	9		95
CALCULATION OF THE ESTIMATE OF EQUIVALENT KL			
Loss of forced air in the cover due to leakage. (m ³ /s) Subtract the number on line 2 from the number on line 1. Enter the results here.	10		20
Loss of compound in forced air (g/s) Multiply the number on line 10 by the number on line 6. Enter the results here.	11		0.044
Loss of compound by permeation through cover (g/s). Line 4 times line 5, line 6, and divide by 100. Enter the results here.	12		0
Loss of compound by permeation through vent (g/s). Line 2 times line 6. Enter the results here.	13		0.22
Treatment of compound in control device (g/s). Line 13 times line 9, divided by 100. Enter the results here.	14		0.209
Total removal from air phase (g/s). Sum of 11, 12, and 13.	15		0.264
Total treatment effectiveness (%) Line 14 divided by 15 times 100.	16		79.1666
[G Cv/Ce] ESTIMATE (m ³ /s) Divide line 15 by line 7.	17		0.025
EQUIVALENT KL. Divide the number on line 17 by line 8.	18		1.67e-05

The permeability is the ratio of the flux (g/cm²) to the gas concentration (g/cm³).

If the gas is generated by the unit, the gas entering the cover may be estimated from an estimate of the cover leak rate and the total gas transferred to the control device.

Form VI DATA FORM FOR THE ESTIMATION OF K ₁ FROM FULL SCALE UNIT DATA WITH BIODEGRADATION			
NAME OF THE FACILITY for site specific biorate determination			example
COMPOUND for site specific biorate determination			methanol
BIOMASS (g/L) This is the dried solids that are obtained from the mixed liquor suspended solids in the full-scale bioreactor.	1		0.075
VOLUME of full-scale system (cubic meters)	2		100000
AREA of the liquid surface of the full-scale system (square meters)	3		10000
INLET CONCENTRATION of compound (g/m ³ or ppmw)	4		100
EXIT CONCENTRATION of compound (g/m ³ or ppmw)	5		5
ESTIMATE OF K _L from Form II (m/s)	6		0.00001
FLOW RATE of waste treated in the full-scale bioreactor (m ³ /s)	7		0.146
CALCULATION OF THE ESTIMATE OF K ₁ FROM FIELD DATA			
REMOVAL WITH BIODEGRADATION (g/s) Subtract the number on line 5 from the number on line 4 and multiply the results by the number on line 7. Enter the results here.	8		13.87
[K _L A] ESTIMATE (m ³ /s) Multiply the number on line 3 by the number on line 6. Enter the results here.	9		0.10
[K ₁ B V + K _L A] (m ³ /s) Divide the number on line 8 by the number on line 5. Enter the results here.	10		2.774
[K ₁ B V] ESTIMATE (m ³ /s) Subtract the number on line 9 from the number on line 10. Enter the results here.	11		2.674
Product of B and V. Multiply the number on line 1 by the number on line 2 and enter the results here.	12		7500
K ₁ ESTIMATE (L/g MLVSS-hr) Divide the number on line 11 by the number on line 12 and multiply by 3600 s/hr. Enter the results here.	13		1.28352

FORM VIIDATA FORM FOR CALCULATING THE
MASS TRANSFER COEFFICIENT FOR A QUIESCENT SURFACE IMPOUNDMENT

Facility Name: _____

Waste Stream Compound: _____

Enter the following:

F - Impoundment fetch (m)	_____
D - Impoundment depth (m)	_____
U_{10} - Windspeed 10 m above liquid surface (m/s)	_____
D_w - Diffusivity of compound in water (cm^2/s)	_____
D_{ether} - Diffusivity of ether in water (cm^2/s)	_____
μ_G - Viscosity of air, ($\text{g}/\text{cm}\cdot\text{s}$)	_____
ρ_G - Density of air, (g/cm^3)	_____
D_a - Diffusivity of compound in air, (cm^2/s)	_____
A - Area of impoundment, (m^2)	_____
H - Henry's law constant, ($\text{atm}\cdot\text{m}^3/\text{g mol}$)	_____
R - Universal gas constant, ($\text{atm}\cdot\text{m}^3/\text{g mol}\cdot^\circ\text{K}$)	_____
μ_L - Viscosity of water, ($\text{g}/\text{cm}\cdot\text{s}$)	_____
ρ_L - Density of liquid, (g/cm^3)	_____
T - Impoundment temperature, ($^\circ\text{C}$)	_____

Calculate the following:

Calculate F/D: _____

A. Calculate the liquid phase mass transfer coefficient, k_L , using one of the following procedures, (m/s)

- Where $F/D < 14$ and $U_{10} > 3.25$ m/s, use the following procedure from MacKay and Yeun:

Calculate the Schmidt number on the liquid side, Sc_L , as follows:

$$Sc_L = \mu_L / \rho_L D_w \quad \underline{\hspace{2cm}}$$

Calculate the friction velocity, U^* , as follows, (m/s):

$$U^* = 0.01 \times U_{10} (6.1 + 0.63 U_{10})^{0.5} \quad \underline{\hspace{2cm}}$$

Where U^* is > 0.3 , calculate k_L as follows:

$$k_L = (1.0 \times 10^{-6}) + (34.1 \times 10^{-4}) U^* \times Sc_L^{-0.5} \quad \underline{\hspace{2cm}}$$

Where U^* is < 0.3 , calculate k_L as follows:

$$k_L = (1.0 \times 10^{-6}) + (144 \times 10^{-4}) (U^*)^{2.2} \times Sc_L^{-0.5} \quad \underline{\hspace{2cm}}$$

- For all other values of F/D and U_{10} , calculate k_L using the following procedure from Springer:¹

¹Springer, C., P. D. Lunney, and K. T. Valsaraj. Emission of Hazardous Chemicals from Surface and Near Surface Impoundments to Air. U.S. Environmental Protection Agency, Solid and Hazardous Waste Research Division. Cincinnati, OH. Project Number 808161-02. December 1984.

Where U_{10} is < 3.25 m/s, calculate k_L as follows:

$$k_L = 2.78 \times 10^{-6} (D_w/D_{\text{ether}})^{2/3}$$

Where U_{10} is > 3.25 and $14 < F/D < 51.2$, Calculate k_L as follows:

$$k_L = [2.605 \times 10^{-9} (F/D) + 1.277 \times 10^{-7}] U_{10}^2 (D_w/D_{\text{ether}})^{2/3}$$

Where $U_{10} > 3.25$ m/s and $F/D > 51.2$, calculate k_L as follows:

$$k_L = (2.611 \times 10^{-7}) U_{10}^2 (D_w/D_{\text{ether}})^{2/3}$$

- B. Calculate the gas phase mass transfer coefficient, k_G , using the following procedure from MacKay and Matsasugu, (m/s):²

Calculate the Schmidt number on the gas side, Sc_G , as follows: $Sc_G = \mu_g/\rho_g D_a$

Calculate the effective diameter of the impoundment, d_e , as follows, (m):

$$d_e = (4A/\pi)^{0.5}$$

Calculate k_{G1} as follows, (m/s): $k_{G1} = 4.82 \times 10^{-3} U_{10}^{0.78} Sc_G^{-0.67} d_e^{-0.11}$

- C. Calculate the partition coefficient, K_{eq} , as follows: $K_{eq} = H/[R(T+273)]$

- D. Calculate the overall mass transfer coefficient, K_q , as follows, (m/s):

$$1/K_q = 1/k_L + 1/K_{eq} k_G$$

Where the total impoundment surface is quiescent:

$$KL = K_q$$

Where a portion of the impoundment surface is turbulent, continue with Form VIII.

²Hwang, S. T. Toxic Emissions from Land Disposal Facilities. Environmental Progress. 1:46-52. February 1982.

FORM VIIIDATA FORM FOR CALCULATING THE
MASS TRANSFER COEFFICIENT FOR AN AERATED SURFACE IMPOUNDMENT

Facility Name: _____

Waste Stream Compound: _____

Enter the following:

J - Oxygen transfer rating of surface aerator, (lb O₂/hr-hp) _____
 POWR - Total power to aerators, (hp) _____
 T - Water temperature, (°C) _____
 O_i - Oxygen transfer correction factor _____
 MW_L - Molecular weight of liquid _____
 A_t - Turbulent surface area of impoundment, (ft²) _____
 (If unknown, use values from Table I)
 A - Total surface area of impoundment, (ft²) _____
 ρ_L - Density of liquid, (lb/ft³) _____
 D_w - Diffusivity of constituent in water, (cm²/s) _____
 D_{O₂, w} - Diffusivity of oxygen in water, (cm²/s) _____
 d - Impeller diameter, (cm) _____
 w - Rotational speed of impeller, (rad/s) _____
 ρ_a - Density of air, (gm/cm³) _____
 N - Number of aerators _____
 g_c - Gravitation constant, (lb_m-ft/s²/lb_f) _____
 d* - Impeller diameter, (ft) _____
 D_a - Diffusivity of constituent in air, (cm²/s) _____
 MW_a - Molecular weight of air _____
 R - Universal gas constant, (atm-m³/g mol. °C) _____
 H = Henry's law constant, (atm-m³/g mol) _____

Calculate the following:

- A. Calculate the liquid phase mass transfer coefficient, k_L, using the following Equation from Thibodeaux:^{3,4}

$$k_L = [8.22 \times 10^{-9} J (POWR)(1.024)^{T-20} O_i 10^6 MW_L / (V_a \rho_L)] (D_w / D_{O_2, w})^{0.5}, (m/s)$$

³GCA Corporation. Emissions Data and Model Review for Wastewater Treatment Operations. Draft Technical Note. Prepared for U.S. Environmental Protection Agency. Contract No. 68-01-6871, Assignment 49. August 1985. p. 4-2.

⁴Hwang, S. T. Toxic Emissions from Land Disposal Facilities. Environmental Progress. 1:46-52. February 1982.

- B. Calculate the gas phase mass transfer coefficient, k_G , using the following procedure from Reinhardt:^{5,6}

Calculate the viscosity of air, μ_a , as follows. (g/cm.s):

$$\mu_a = 4.568 \times 10^{-7} T + 1.7209 \times 10^{-4}$$

Calculate the Reynold's number as follows:

$$Re = d^2 \omega \rho_a / \mu_a$$

Calculate power to impeller, P_i , as follows, (ft.lb/s):

$$P_i = 0.85 (\text{POWR}) 550/N$$

Calculate the power number, p , as follows:

$$p = P_i g_c / (\rho_i d^5 \omega^3)$$

Calculate the Schmidt number, Sc_G , as follows:

$$Sc_G = \mu_a / \rho_a D_a$$

Calculate the Fronde number, F_r , as follows:

$$F_r = d^3 \omega^2 / g_c$$

Calculate k_G as follows:

$$k_G = 1.35 \times 10^{-7} Re^{1.42} p^{0.4} Sc_G^{0.5} F_r^{-0.21} D_a MW_a / d, (\text{m/s})$$

- C. Calculate the partition coefficient, Keq , as follows:

$$Keq = H/[R(T+273)]$$

- D. Calculate the overall turbulent mass transfer coefficient, K_t , as follows, (m/s):

$$1/K_t = 1/k_L + 1/Keq.k_G$$

- E. Calculate the quiescent mass transfer coefficient, K_q , for the impoundment using Form VII.

- F. Calculate the overall mass transfer coefficient, KL , for the impoundment as follows:

$$KL = \frac{K_q (A - A_t) + K_t A_t}{A}$$

⁵GCA Corporation. Emissions Data and Model Review for Wastewater Treatment Operations. Draft Technical Note. Prepared for U.S. Environmental Protection Agency. Contract No. 68-01-6871, Assignment 49. August 1985. p. 4-3.

⁶Reinhardt, J. R. Gas-Side Mass-Transfer Coefficient and Interfacial Phenomena of Flat-Bladed Surface Agitators. Ph.D. dissertation, University of Arkansas, Fayetteville, Ar. 1977. p. 48.

Table 1. Turbulent Areas and Volumes for Surface Agitators^a

ω , Motor horsepower, hp	A _t , Turbulent area,		Effective depth, ft	V, Agitated volume, ft ³	a _v , Area per volume ft ² /ft ³
	ft ²	m ²			
5	177	16.4	10	1,767	0.100
7.5	201	18.7	10	2,010	0.100
10	227	21	10.5	2,383	0.0952
15	284	26.4	11	3,119	0.0909
20	346	32.1	11.5	3,983	0.0870
25	415	38.6	12	4,986	0.0833
30	491	45.7	12	5,890	0.0833
40	661	61.4	13	8,587	0.0769
50	855	79.5	14	11,970	0.0714
60	1,075	100	15	16,130	0.0666
75	1,452	135	16	23,240	0.0625
100	2,206	205	18	39,710	0.0555

^aData for a high speed (1,200 rpm) aerator with 60 cm propeller diameter (d).

Form IX DATA FORM FOR THE ESTIMATION OF THE HENRY'S LAW CONSTANT FOR A COMPOUND IN THE BIOLOGICAL TREATMENT UNIT			
NAME OF THE FACILITY for site specific biorate determination		example	
COMPOUND for site specific biorate determination		methanol	
LISTED HENRY'S LAW VALUE AT 25 degrees Celsius. (Table 1, ratio of mol fraction in gas to mole fraction in water)	1		.2885
TEMPERATURE of the liquid in the unit (deg.C)	2		25
CALCULATION OF K			
Temperature adjusted Henry's law value (equals the value on line 1 if the temperature on line 2 is 25)	3		0.2885
Discuss basis of temperature adjustment			
Temperature in degrees Kelvin. Add 273.16 to the number on line 2. Enter the results here.	4		298.1600
Temperature ratio. Divide 273.16 by the number on line 4. Enter the results here.	5		0.9162
Henry's Law adjustment factor. Multiply the number on line 5 by 0.804 and enter the results here.	6		0.7366
Henry's Law value (g/m3 gas per g/m3 liquid) Multiply the number on line 3 by the number on line 6 and divide the results by 1000. Enter the results here and on Form V line 6.	7		0.000213
Henry's Law value (atm m3 per mol) Divide the number on line 3 by 55555 and enter the results here.	8		0.000005

Form X DATA FORM FOR THE CALCULATION OF THE HENRY'S LAW CONSTANT FOR A COMPOUND IN A SEALED BATCH TEST					
NAME OF THE FACILITY for site specific biorate determination					example
COMPOUND for site specific biorate determination					methanol
REACTOR HEADSPACE VOLUME, (L)				1	1
REACTOR LIQUID VOLUME (L)				2	10
TEMPERATURE of the liquid in the unit (deg.C)				3	25
Wastewater compounds are biodegraded by biomass in a sealed batch test. For the compound listed above, a data set of liquid and gas concentrations is measured at four different times during the sealed batch test. The data are entered below, and the ratio of the concentrations for each data set is entered in column E.					
A	B	C	D	E	
Data set	Time (hr)	Liquid Conc. (mg/L)	Gas Conc. (mg/L)	K_{eq} D/C	.0002108
1					
2					
3					
4					
Temperature in degrees Kelvin. Add 273.16 to the number on line 3. Enter the results here				4	298.16
Molar ratio. Multiply the number on line 4 by 4.555. Enter the results on line 5.				5	1,358.12
Henry's law value (mg/L gas per mg/L liquid). Enter the average value in column E above on line 6.				6	0.000211
Henry's law value (mole fraction gas per mole fraction liquid) Multiply the number on line 6 by the number on line 5. Enter the results on line 7.				7	0.286563
Expected Henry's law value. Enter the number from Form IX line 3.				8	0.288500
Precision: Discuss any variability of the numbers in column E. Accuracy: Discuss any difference between the numbers on line 7 and line 8. Identify which value will be used for evaluating the biodegradation rate data. Divide the Henry's law value by the number on line 5 and enter the results on line 9.					
K_{eq} value (mg/L gas per mg/L liquid)				9	0.000211
HEADSPACE CORRECTION FACTOR. Divide the number on line 2 by the sum of the number on line 2 and the product of the numbers on line 9 and line 1. Enter the result on line 10.				10	0.999979
The headspace correction factor should equal approximately 1 if the headspace is relatively small. Reducing the headspace volume may improve the test data quality if the headspace correction factor is substantially less than one.					

Form XI DATA FORM FOR THE CALCULATION OF THE HENRY'S LAW CONSTANT AND THE STRIPPING CONSTANT FOR A COMPOUND IN AN AERATED BATCH TEST				
NAME OF THE FACILITY for site specific biorate determination				example
COMPOUND for site specific biorate determination				methanol
Concentration basis (liquid or gas)				gas
TEMPERATURE of the liquid in the unit (deg.C)			1	25
GAS FLOW RATE (L/hr)			2	1
LIQUID VOLUME (L)			3	10
Co concentration measurement at time=0 (mg/L)			4	
A	B	C	D	E
data point	time (hr)	Concentration, C (mg/L)	C/Co	-ln(C/Co)
1				
2				
3				
4				
5				
<p>CALCULATIONS. Use additional lines as needed in an expansion of the above table. Plot the values in column E (y axis) vs the data in column B (x axis). Reject outliers. Curve fit with a straight line. Calculate the slope and enter the slope on line 7. Attach the plot and table to this form.</p>				
Temperature in degrees Kelvin. Add 273.16 to the number on line 1. Enter the results here			5	298.16
MOLAR RATIO. Multiply the number on line 5 by 4.555. Enter the results on line 6.			6	1,358.12
Slope of the plot of -ln(C/Co) vs time (per hour)			7	2.10e-05
Calculated K_{eq} value (mg/L gas per mg/L liquid). Divide the number on line 7 by the number on line 2 and multiply the results by the number on line 3. Enter the results on line 8.			8	0.000210
Expected K_{eq} value. Divide the number from Form IX line 3 by the number on line 6 and enter the results on line 9.			9	0.000212
<p>Discuss any differences between the numbers on line 8 and line 9. Identify which value will be used for the evaluation of the stripping constant (line 10). Problems can sometimes be resolved by system redesign, changing the bubble size, or confirming the experimental value of K_{eq} by using Form X.</p>				
K_{eq} value (mg/L gas per mg/L liquid)			10	0.000210
STRIPPING CONSTANT(per hour). Divide the number on line 10 by number on line 3 and multiply by the number on line 2. Enter the final result on line 11.			11	0.000021
The headspace correction factor equals one for an aerated batch test.				

Form XII DATA FORM FOR THE CALCULATION OF BATCH RATES AND THE DETERMINATION OF THE MONOD CONSTANTS						
Complete this table with measured liquid concentrations from the batch test. If headspace concentrations were measured and equilibrium has been verified, convert them to liquid concentrations by using K_{eq} . If the data are scattered, plot the concentration vs. time data, and fit the data with a curve based on Equation Appendix C-4 for the Aerated Batch test or Equation Appendix C-6 for the Sealed Batch test. Complete this form with concentrations obtained from that fitted curve. If the curve fitting approach is used, attach a plot of the data and the associated fitted curve to this form. Note: If the initial results appear to be anomalous, do not use the initial results.						
COMPOUND for site specific biorate determination						Methanol
Stripping rate constant (/hr) Form XI, line 11					1	2.1e-5
Enter the batch test Biomass concentration (g/L) on line 2.					2	.258
Headspace correction factor. For a Sealed Batch test use Form X line 10 or 1.00 for an Aerated Batch test.					3	0.999979
A	B	C	D	E	F	G
concentration S (mg/L)	time (hr)	Rate for interval (mg/L-hr) $(a_i - a_{i-1}) /$ $(b_{i+1} - b_i)$	Log Mean S for interval (mg/L) $(a_i - a_{i-1}) /$ $\ln(a_i / a_{i-1})$	Ratio of rate to S (/hr) (C/D)	Adjusted rate (/hr) (E-line 1)	Reciprocal of adj. rate (hr) (1/F)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
Continue table on attached sheet as needed. Plot values in column G on y axis, values in column D on x axis. Extrapolate the trend of data points to the y intercept (S=0). Attach the plot to the form.						
Slope of line near intercept (hr-L/mg)					4	.4845
Y intercept from plot (hr)					5	1.938
First order rate constant K1 (or Qm/Ks, L/g-hr). The number 1.00 divided by the products of the values on line 5, line 2, and line 3.					6	2.000026
Zero order rate constant (Qm, /hr). The number 1.00 divided by the products of the values on line 4, line 2, and line 3.					7	8.000104
Concentration applicable to full-scale unit. Enter on line 8.					8	5
Effective biorate K1 ESTIMATE (L/g MLVSS-hr)*					9	0.9606
*Match the concentration on line 8 to the values in Column D and look up the equivalent rate in Column F. Divide the result with both the biomass concentration (line 2) and the headspace correction factor (line 3). Enter this value on line 9. Do not use this method to estimate K1 for line 9 if the data quality is poor in Column F. The number on line 9 is multiplied by the biomass and the system concentration to estimate the full scale biorate. Alternatively, the Monod model parameters may be used.						

APPENDIX D TO PART 63—ALTERNATIVE
VALIDATION PROCEDURE FOR EPA
WASTE AND WASTEWATER METHODS

1. *Applicability*

This procedure is to be applied exclusively to Environmental Protection Agency methods developed by the Office of Water and the Office of Solid Waste. Alternative methods developed by any other group or agency shall be validated according to the procedures in Sections 5.1 and 5.3 of Test Method 301, 40 CFR Part 63, Appendix A. For the purposes of this appendix, "waste" means waste and wastewater.

2. *Procedure*

This procedure shall be applied once for each waste matrix. Waste matrix in the context of this procedure refers to the target compound mixture in the waste as well as the formulation of the medium in which the target compounds are suspended. The owner or operator shall prepare a sampling plan. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity. The sample plan shall include procedures for determining recovery efficiency of the relevant compounds regulated in the applicable subpart. An example of an acceptable sampling plan would be one that incorporates similar sampling and sample handling requirements to those of Method 25D of 40 CFR part 60, appendix A.

2.1. *Sampling and Analysis*

2.1.1. For each waste matrix, collect twice the number of samples required by the applicable regulation. Designate and label half the sample vials the "spiked" sample set, and the other half the "unspiked" sample set. Immediately before or immediately after sampling (immediately after in the context of this procedure means after placing the sample into the sample vial, but before the

sample is capped, cooled, and shipped to the laboratory for analysis), inject, either individually or as a solution, all the target compounds into each spiked sample.

2.1.2. The mass of each spiked compound shall be 40 to 60 percent of the mass expected to be present in the waste matrix. If the concentration of the target compounds in the waste are not known, the mass of each spiked compound shall be 40 to 60 percent of the limit allowed in the applicable regulation. Analyze both sets of samples (spiked and unspiked) with the chosen method.

3. *Calculations*

For each pair of spiked and unspiked samples, determine the fraction of spiked compound recovered (R) using the following equations.

where:

m_r = mass spiked compound measured (μ g).

m_s = total mass of compound measured in spiked sample (μ g).

m_u = total mass of compound measured in unspiked sample (μ g).

where:

S = theoretical mass of compound spiked into spiked sample (μ g).

3.1. *Method Evaluation*

In order for the chosen method to be acceptable for a compound, $0.70 \leq R \leq 1.30$ (R in this case is an average value of all the spiked and unspiked sample set R values). If the average R value does not meet this criterion for a target compound, the chosen method is not acceptable for that compound, and therefore another method shall be evaluated for acceptance (by repeating the procedures outlined above with another method).

3.2. *Records and Reports*

Report the average R value in the test report and correct all reported measurements made with the method with the calculated R value for that compound by using the following equation:

$$\text{Reported Result} = \frac{\text{Measured Mass of Compound}}{R \text{ for that compound}}$$

3.3. *Optional Correction Step*

If the applicable regulation allows for correction of the mass of the compound in the waste by a published f_m value, multiply the

reported result calculated above with the appropriate f_m value for that compound.

[61 FR 34200, July 1, 1996]